INTERMEDIATE ACCOUNTING

18TH EDITION

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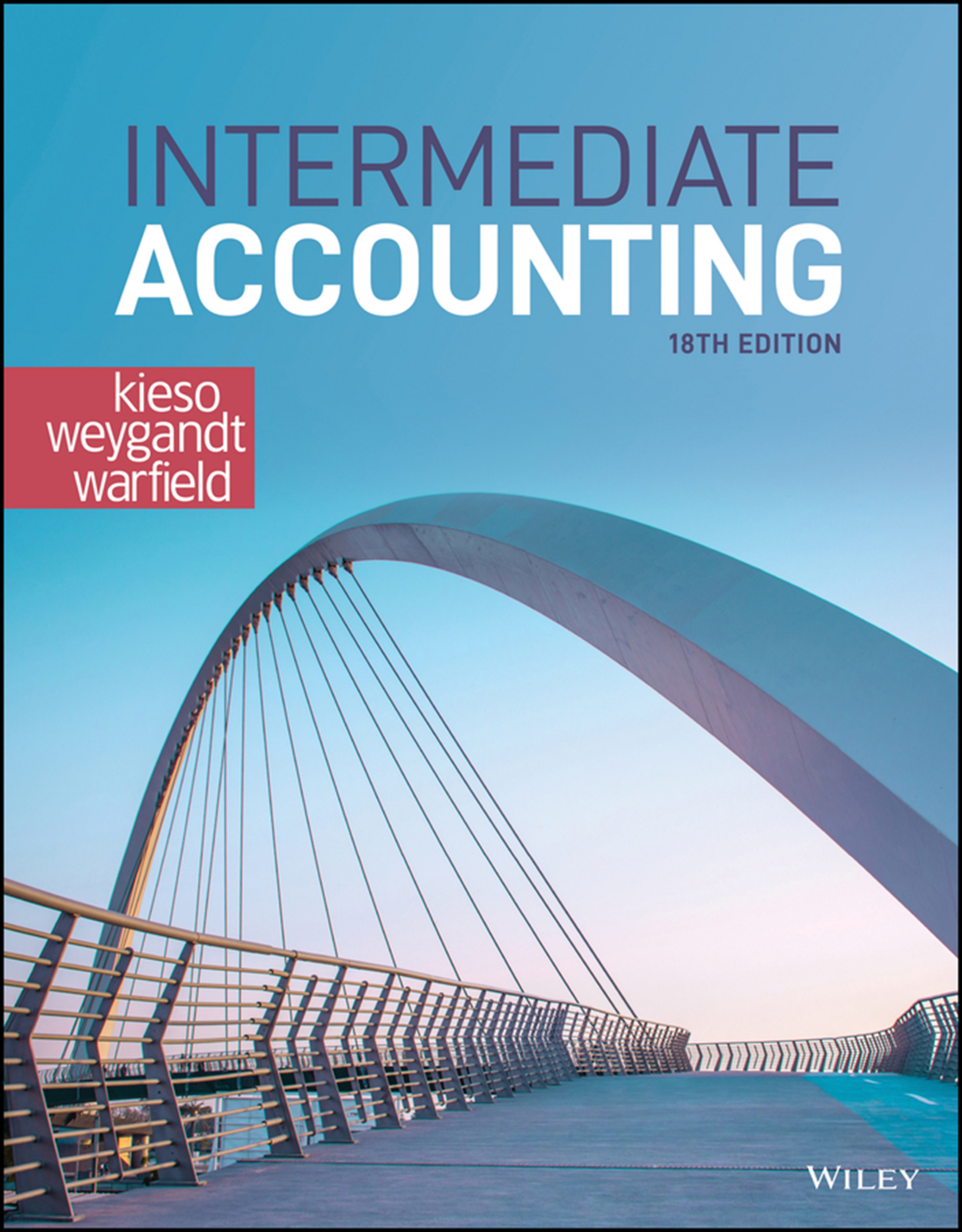
weygandt
warfield



WILEY

Intermediate Accounting

18th Edition

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DEDICATED TO

Our wives,
Donna, Enid, and Mary,
for their love,
support, and encouragement

Brief Contents

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SUBJECT INDEX

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From the Authors

Students and finance professionals often refer to our text as the "Bridge to the Profession" because it has provided millions of students with the knowledge and skills helpful for them to excel in their future careers. One major reason for the text's success is that we continue to evaluate each new edition and ask the question "How can we make *Intermediate Accounting* better"? Here are examples of why we believe that we have improved not only the content but also the pedagogy of the Eighteenth Edition to help students master this subject material. This is why we are extremely excited about its publication.

- **Readability.** We have spent considerable time enhancing the readability of the text. We have broken down the content into shorter, more digestible sections by adding subheadings, bullet points, and more illustrations and tables. We also have created a more conversational tone throughout the text, often talking directly to the student and thoroughly explaining the solutions for the in-text examples.
- **Real-World Emphasis.** A proven way to help students master the subject is to explain the concepts of financial reporting using real companies whenever possible. Many of our examples use real-world companies like **Microsoft**, **Nike**, **Kmart**, **Home Depot**, and **Starbucks** to illustrate the significant financial reporting issues. In addition, our Accounting Matters feature provides up-to-date illustrations of how accounting is used in practice to provide information on the financial health of companies. Engaging discussions of contemporary issues related to the Covid-19 pandemic and impairments; new ways to compensate employees; disclosure of environmental, social, and governance (ESG) issues; and revenue recognition are just a few of the many Accounting Matters topics highlighted in the text.
- **Learn by Doing.** We have asked many students and instructors whether there is a secret for success in this course. A common response turns out to be not much of a secret—"Do the homework!" The more time students spend on the homework assignments using the various tools in this text, the more likely they will learn the essential concepts. Therefore, in addition to the homework at the end of the chapter, we have provided in the text discussion opportunities for students to work on the concept at the point of learning. As a result, a student can read the concept, followed by an example of how this concept should be applied, followed by an opportunity to practice.

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- **Content Upgrades.** The topical content of the chapters has two major changes.
  1. **We have merged Chapters 1 and 2 from the previous edition into one chapter.** This consolidation should be helpful to students as it provides in one chapter the framework for concepts used in subsequent chapters.
  2. **We now provide more information related to revenue recognition in Chapter 3.** We view this material in Chapter 3 as useful to students who will not take the second part of Intermediate Accounting. We continue with the highly acclaimed comprehensive chapter on revenue recognition later in the text.

  In addition, we made significant changes to the chapters on receivables; property, plant, and equipment; current liabilities; stockholders equity; investments; and dilutive securities.

We want to thank Laura Wiley and Kristen Fuhremann for their help in developing the many changes to this new edition. Laura and Kristen assisted us with updating and streamlining chapter content. They also considered the content from a learning perspective to help us identify how we can help students to best navigate the complex topics covered in the text.

We are excited about *Intermediate Accounting*, Eighteenth Edition. We believe it meets an important objective of providing useful information to educators and students interested in learning about GAAP. Suggestions and comments from users of this text will be appreciated. Please feel free to e-mail any one of us.

Donald E. Kieso
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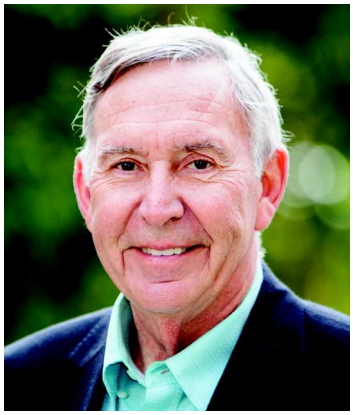
About the Authors

Don Kieso

DONALD E. KIESO, PhD, CPA, received his bachelor's degree from Aurora University and his doctorate in accounting from the University of Illinois. He has served as chairman of the Department of Accountancy and is currently the KPMG Emeritus Professor of Accountancy at Northern Illinois University. He has public accounting experience with Price Waterhouse & Co. (San Francisco and Chicago) and Arthur Andersen & Co. (Chicago) and research experience with the Research Division of the American Institute of Certified Public Accountants (New York). He has done postdoctorate work as a Visiting Scholar at the University of California at Berkeley and is a recipient of NIU's Teaching Excellence Award and four Golden Apple Teaching Awards. Professor Kieso is the author of other accounting and business books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Illinois CPA Society. He has served as a member of the Board of Directors of the Illinois CPA Society, then AACSB's Accounting Accreditation Committees, the State of Illinois Comptroller's Commission, as Secretary-Treasurer of the Federation of Schools of Accountancy, and as Secretary-Treasurer of the American Accounting Association. Professor Kieso is currently serving on the Board of Trustees and Executive Committee of Aurora University, as a member of the Board of Directors of Kishwaukee Community Hospital, and as Treasurer and Director of Valley West Community Hospital. From 1989 to 1993, he served as a charter member of the National Accounting Education Change Commission. He is the recipient of the Outstanding Accounting Educator Award from the Illinois CPA Society, the FSA's Joseph A. Silvoso Award of Merit, the NIU Foundation's Humanitarian Award for Service to Higher Education, a Distinguished Service Award from the Illinois CPA Society, and in 2003 an honorary doctorate from Aurora University.



Jerry Weygandt

JERRY J. WEYGANDT, PhD, CPA, is the Arthur Andersen Alumni Emeritus Professor of Accounting at the University of Wisconsin—Madison. He holds a Ph.D. in accounting from the University of Illinois. Articles by Professor Weygandt have appeared in the *Accounting Review, Journal of Accounting Research, Accounting Horizons, Journal of Accountancy,* and other academic and professional journals. These articles have examined such financial reporting issues as accounting for price-level adjustments, pensions, convertible securities, stock option contracts, and interim reports. Professor Weygandt is author of other accounting and financial reporting books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Wisconsin Society of Certified Public Accountants. He has served on numerous committees of the American Accounting Association and as a member of the editorial board of the Accounting Review; he also has served as President and Secretary-Treasurer of the American Accounting Association. In addition, he has been actively involved with the American Institute of Certified Public Accountants and has been a member of the Accounting Standards Executive Committee (AcSEC) of that organization. He has served on the FASB task force that examined the reporting issues related to accounting for income taxes and served as a trustee of the Financial Accounting Foundation. Professor Weygandt has received the Chancellor's Award for Excellence in Teaching and the Beta Gamma Sigma Dean's Teaching Award. He is a member of the board of directors of Artis-Naples. He is the recipient of the Wisconsin Institute of CPA's Outstanding Educator's Award and the Lifetime Achievement Award. He also received the American Accounting Association's Outstanding Educator Award.

Terry Warfield

TERRY D. WARFIELD, PhD, is the PwC Chair in Accounting at the University of Wisconsin—Madison. He received a B.S. and M.B.A. from Indiana University and a Ph.D. in accounting from the University of Iowa. Professor Warfield's area of expertise is financial reporting, and prior to his academic career, he worked for five years in the banking industry. He served as the Academic Accounting Fellow in the Office of the Chief Accountant at the U.S. Securities and Exchange Commission in Washington, D.C. from 1995–1996. Professor Warfield's primary research interests concern financial accounting standards and disclosure policies. He has published scholarly articles in *The Accounting Review, Journal of Accounting and Economics, Research in Accounting Regulation, and Accounting Horizons*, and he has served on the editorial boards of *The Accounting Review, Accounting Horizons*, and *Issues in Accounting Education*. He has served as president of the Financial Accounting and Reporting Section, the Financial Accounting Standards Committee of the American Accounting Association (Chair 1995–1996), and on the AAA-FASB Research Conference Committee. He also served on the Financial Accounting Standards Advisory Council of the Financial Accounting Standards Board and as a trustee of the Financial Accounting Foundation. Professor Warfield has received teaching awards at both the University of Iowa and the University of Wisconsin, and he was named to the Teaching Academy at the University of Wisconsin in 1995. Professor Warfield has developed and published several case studies based on his research for use in accounting classes. These cases have been selected for the AICPA Professor-Practitioner Case Development Program and have been published in *Issues in Accounting Education*.

New to This Edition

The last few years have brought many changes to the teaching and learning environment. As a result, we scrutinized every line, every section, every chapter of *Intermediate Accounting*, to make sure our text best meets the needs of today's students and instructors. The most significant changes throughout the text include:

- MORE headings and bulleted/numbered lists to highlight key information.
- NEW "What, Why, and How" chapter opening feature.
- NEW Chapter Roadmap organized by learning objectives.
- NEW Analytics in Action feature in every chapter.
- NEW numbered examples throughout the discussion.
- NEW "Put It into Practice" feature at the end of each learning objective.
- ADDED T-accounts, where appropriate, to illustrate effects of accounting entries on account balances.

Changes by chapter are as follows.

Content Changes by Chapter

Chapter 1: The Environment and Conceptual Framework of Financial Reporting (previously Chapters 1 and 2)

- NEW discussion of the historical cost principle.
- REVISED illustration of the organizational structure for setting accounting standards.
- NEW Accounting Matters feature about (1) a situation in which the Codification did not cover a certain type of transaction and (2) neutrality.
- UPDATED Accounting Matters feature on materiality.

Chapter 2: The Accounting Information System (previously Chapter 3)

- NEW discussion on computerized and manual accounting systems.
- UPDATED discussion of the journal and ledger.
- NEW graphic highlighting the steps of the accounting cycle as they are discussed throughout the chapter.
- NEW illustrations on (1) the principles of an efficient and effective accounting information system, (2) the transaction identification process, (3) journalizing and posting, and (4) summary of the accounting cycle.
- NEW Accounting Matters features on (1) the use of bots in accounting and (2) blockchain.

Chapter 3: Income Statement, Related Information, and Revenue Recognition (previously Chapter 4)

- NEW discussion on (1) the fundamentals of revenue recognition, with practice and homework, and (2) the quality of earnings.
- REVISED illustration and discussion of the components of the multiple-step income statement.
- MOVED discussion of accounting changes and errors to an appendix.

Chapter 4: Balance Sheet and Statement of Cash Flows (previously Chapter 5)

- NEW illustration comparing the operating cycles of a merchandising company and a manufacturing company.
- NEW Accounting Matters feature on (1) how cruise lines navigated the Covid-19 pandemic. (2) cryptocurrency and how it is reported on the balance sheet, (3) how companies delay payments to suppliers to increase financial flexibility, and (4) comparing **Netflix**'s net income to operating cash flow.
- MOVED discussion of footnotes and techniques of disclosure to an appendix.

Chapter 5: Accounting and the Time Value of Money (previously Chapter 6)

- NEW inclusion of an Excel solution in the margin for time value of money examples throughout the chapter.
- NEW appendix demonstrating the use of Excel and financial calculators to solve time value of money problems.

Chapter 6: Cash and Receivables (previously Chapter 7)

- NEW inclusion of an Excel solution in the margin for time value of money examples throughout the chapter.
- EXPANDED discussion of the effective-interest method of amortization of a discount on notes receivable.
- NEW Accounting Matters feature on (1) why cryptocurrency is not reported as cash and (2) how receivables are denominated in foreign currencies.
- REMOVED discussion of the fair value option for reporting receivables.

Chapter 7: Valuation of Inventories: A Cost-Basis Approach (previously Chapter 8)

- NEW discussion comparing the inventory valuation methods and the basis for selecting an inventory method.
- EXPANDED discussion of inventory cost flow, including an illustration of the computation of cost of goods sold.
- NEW illustrations for (1) FOB shipping point and FOB destination and consigned goods and (2) product versus period costs.
- REMOVED discussion of special sales agreements and high rates of return. These topics are covered in depth in Chapter 17.

Chapter 8: Inventories: Additional Valuation Issues (previously Chapter 9)

- NEW Accounting Matters feature about (1) how companies handle excess inventory situations and (2) how some companies experienced significant increases in gross margin during the Covid-19 pandemic.
- REMOVED discussion of using an allowance for inventory market adjustments.
- NEW illustrations on (1) purchase commitment disclosures from actual companies, (2) the advantages of the retail inventory method, and (3) the pros and cons of inventory management.

Chapter 9: Acquisition and Disposition of Property, Plant, and Equipment (previously Chapter 10)

- NEW discussions on (1) the cost of land improvements and (2) accounting for asset retirement costs and obligations.
- EXPANDED discussion and NEW illustration on building acquisition costs, showing if the building is purchased, constructed by an independent contractor, or self-constructed.
- NEW illustrations on (1) the decision rule for amount of interest to capitalize, (2) how to calculate avoidable interest, and (3) expenditures over the life of a vehicle and how to account for them.
- REMOVED discussion on cash discounts when valuing fixed assets.

Chapter 10: Depreciation, Impairments, and Depletion (previously Chapter 11)

- REVISED discussions on (1) group and composite method of depreciation, (2) recognition and measurement of impairments, and (3) the continuing controversy related to full cost and successful efforts accounting.
- NEW illustrations on (1) physical and economic factors affecting depreciation and (2) impairments.
- NEW Accounting Matters feature on depreciation choices.

Chapter 11: Intangible assets (previously Chapter 12)

- REVISED discussion on (1) the valuation of purchased and internally created intangibles and (2) the recognition, measurement, and impairment of both limited-life and indefinite-life impairments.
- EXPANDED discussion of bargain purchase accounting.
- NEW Accounting Matters feature on (1) reporting cryptocurrencies, (2) **Disney**'s revenue from intangible assets, and (3) research and development costs.
- NEW illustration on different types of intangibles.
- UPDATED Accounting Matters box on goodwill impairments.

Chapter 12: Current Liabilities and Contingencies (previously Chapter 13)

- NEW discussion on valuation and reporting of current liabilities.
- EXPANDED discussions of (1) unearned revenues related to gift cards, customer advances, and service type warranties, and (2) presentation and analysis, featuring **Best Buy**, **Microsoft**, **Walmart**, and **General Electric**.
- UPDATED discussion of classification for refinancing of short-term debt.
- NEW illustration on payroll deductions.
- NEW Accounting Matters feature on salary, benefits, and generation Z.

Chapter 13: Long-Term Liabilities (previously Chapter 14)

- STREAMLINED types of bonds discussion.
- EXPANDED discussion of mortgage bonds.
- MOVED off-balance sheet financing to Presentation and Decision Analysis section.
- NEW illustration on notes and bonds payable.
- NEW graphical presentation of time value material with Excel solutions presented.
- NEW Accounting Matters box on (1) hot market for bonds and (2) the use of environmental, social and governance (ESG) bonds to fund ESG projects.

Chapter 14: Stockholders' Equity (previously Chapter 15)

- NEW discussions on (1) characteristics and advantages of a corporation and (2) retiring treasury stock.
- EXPANDED discussions on (1) forming a corporation and components of stockholders' equity and (2) treasury stock.
- NEW Accounting Matters feature on (1) SPACS, (2) Class (B) stock, and (3) stock splits.
- NEW illustration on redeemable preferred stock.

Chapter 15: Dilutive Securities and Earnings per Share (previously Chapter 16)

- NEW discussions on (1) dilution of ownership (and NEW illustration), (2) stock compensation plans related to restricted-stock and restricted-stock-unit plans, (3) trends in stock compensation, and (4) usefulness of earnings per share information.
- REVISED discussion of convertibles and stock warrants.
- Updated Accounting Matters feature on convertible debt issuances.

Chapter 16: Investments (previously Chapter 17)

- NEW discussions on (1) overview of investments in securities and (2) the advantages of investments in various securities.
- REVISED (1) presentation of securities information in the financial statements and (2) discussion of the fair value option.
- NEW example of equity method of accounting.
- NEW illustration on comparing equity method to consolidation.

Chapter 17: Revenue Recognition (previously Chapter 18)

- NEW presentation criteria for revenue recognition over time.
- REVISED discussions of (1) identifying contract with customer and (2) sales returns and allowances.
- NEW illustrations on (1) steps in the revenue recognition process and (2) repurchase agreements and consignments.

Chapter 18: Accounting for Income Taxes (previously Chapter 19)

- REVISED presentation issues related to deferred tax assets and deferred tax liabilities.
- NEW illustrations on (1) the difference between income tax payable and income tax expense and (2) loss carryforwards.
- NEW Accounting Matters feature on deferring tax payments.

Chapter 19: Accounting for Pensions and Postretirement Benefits (previously Chapter 20)

- NEW discussion on issues related to retirement planning.
- REVISED discussion on defined contribution versus defined benefit plans.
- NEW illustrations on (1) retirement related to age categories and (2) the rationale for various disclosures in the notes to the financial statements.

Chapter 20: Accounting for Leases (previously Chapter 21)

- STREAMLINED discussion of advantages and disadvantages from both the lessee and lessor perspective.
- REVISED discussion related to conceptual nature of leasing.
- NEW illustrations on (1) advantages of leasing from the lessor's perspective, (2) operating leases, and (3) computing right-of-use lease assets.
- REVISED illustration on lease classification tests.

Chapter 21: Accounting Changes and Error Analysis (previously Chapter 22)

- UPDATED disclosure related to change in estimates.
- REVISED example to emphasize change in inventory rather than long-term construction contracts.

Chapter 22: Statement of Cash Flows (previously Chapter 23)

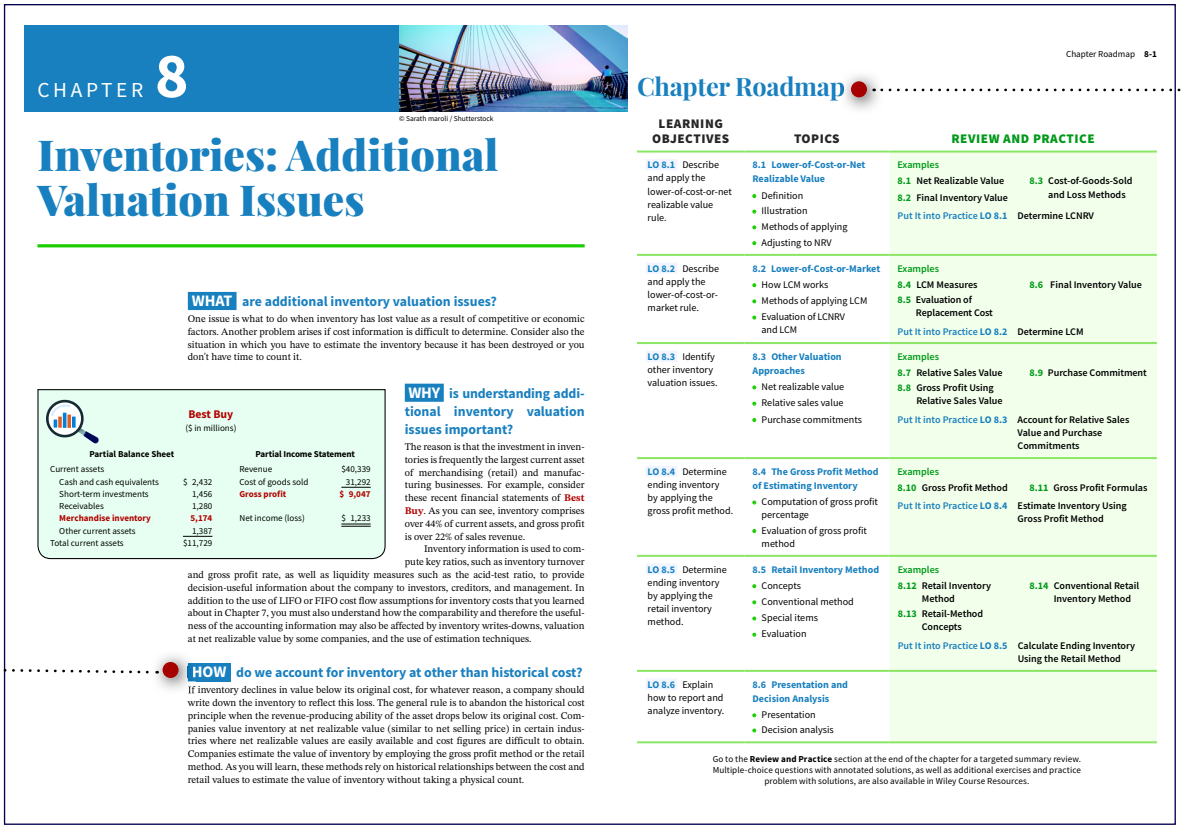
- UPDATED discussion on the usefulness of the cash flow statement.
- NEW illustration on working capital adjustments.
- UPDATED illustration on cash flow classifications.
- NEW Accounting Matters feature on cash flow pressures during Covid-19.

Chapter 23: Full Disclosure in Financial Reporting (previously Chapter 24)

- NEW discussion of climate-related disclosures.
- REVISED discussion of (1) related parties and subsequent events and (2) Internet financial reporting.
- NEW Accounting Matters feature on influence of social media on accounting disclosures.

Reimagined Pedagogy

This edition continues the tradition of providing numerous key learning aids to help students master the text material and prepare them for a successful career in accounting, reimagined as follows.



CHAPTER 8

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Inventories: Additional Valuation Issues

WHAT are additional inventory valuation issues?

One issue is what to do when inventory has lost value as a result of competitive or economic factors. Another problem arises if cost information is difficult to determine. Consider also the situation in which you have to estimate the inventory because it has been destroyed or you don't have time to count it.

Best Buy
($ in millions)

Partial Balance Sheet		Partial Income Statement	
Current assets		Revenue	$40,339
Cash and cash equivalents	$ 2,432	Cost of goods sold	31,292
Short-term investments	1,456	**Gross profit**	**$ 9,047**
Receivables	1,280		
Merchandise inventory	**5,174**	Net income (loss)	$ 1,233
Other current assets	1,387		
Total current assets	$11,729		

WHY is understanding additional inventory valuation issues important?

The reason is that the investment in inventories is frequently the largest current asset of merchandising (retail) and manufacturing businesses. For example, consider these recent financial statements of **Best Buy**. As you can see, inventory comprises over 44% of current assets, and gross profit is over 22% of sales revenue.

Inventory information is used to compute key ratios, such as inventory turnover and gross profit rate, as well as liquidity measures such as the acid-test ratio, to provide decision-useful information about the company to investors, creditors, and management. In addition to the use of LIFO or FIFO cost flow assumptions for inventory costs that you learned about in Chapter 7, you must also understand how the comparability and therefore the usefulness of the accounting information may also be affected by inventory writes-downs, valuation at net realizable value by some companies, and the use of estimation techniques.

HOW do we account for inventory at other than historical cost?

If inventory declines in value below its original cost, for whatever reason, a company should write down the inventory to reflect this loss. The general rule is to abandon the historical cost principle when the revenue-producing ability of the asset drops below its original cost. Companies value inventory at net realizable value (similar to net selling price) in certain industries where net realizable values are easily available and cost figures are difficult to obtain. Companies estimate the value of inventory by employing the gross profit method or the retail method. As you will learn, these methods rely on historical relationships between the cost and retail values to estimate the value of inventory without taking a physical count.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 8.1 Describe and apply the lower-of-cost-or-net realizable value rule.	8.1 Lower-of-Cost-or-Net Realizable Value • Definition • Illustration • Methods of applying • Adjusting to NRV	Examples 8.1 Net Realizable Value 8.2 Final Inventory Value 8.3 Cost-of-Goods-Sold and Loss Methods Put It into Practice LO 8.1 Determine LCNRV
LO 8.2 Describe and apply the lower-of-cost-or-market rule.	8.2 Lower-of-Cost-or-Market • How LCM works • Methods of applying LCM • Evaluation of LCNRV and LCM	Examples 8.4 LCM Measures 8.5 Evaluation of Replacement Cost 8.6 Final Inventory Value Put It into Practice LO 8.2 Determine LCM
LO 8.3 Identify other inventory valuation issues.	8.3 Other Valuation Approaches • Net realizable value • Relative sales value • Purchase commitments	Examples 8.7 Relative Sales Value 8.8 Gross Profit Using Relative Sales Value 8.9 Purchase Commitment Put It into Practice LO 8.3 Account for Relative Sales Value and Purchase Commitments
LO 8.4 Determine ending inventory by applying the gross profit method.	8.4 The Gross Profit Method of Estimating Inventory • Computation of gross profit percentage • Evaluation of gross profit method	Examples 8.10 Gross Profit Method 8.11 Gross Profit Formulas Put It into Practice LO 8.4 Estimate Inventory Using Gross Profit Method
LO 8.5 Determine ending inventory by applying the retail inventory method.	8.5 Retail Inventory Method • Concepts • Conventional method • Special items • Evaluation	Examples 8.12 Retail Inventory Method 8.13 Retail-Method Concepts 8.14 Conventional Retail Inventory Method Put It into Practice LO 8.5 Calculate Ending Inventory Using the Retail Method
LO 8.6 Explain how to report and analyze inventory.	8.6 Presentation and Decision Analysis • Presentation • Decision analysis	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

What/Why/How

Each chapter begins with an engaging overview of **what** the topic is, **why** it is important to decision-makers, and **how** the concepts are translated in accounting procedures.

Chapter Roadmap

The Chapter Roadmap allows students to easily see the chapter's topics as well as the worked-out examples and practice opportunities associated with each.

A Visual Approach

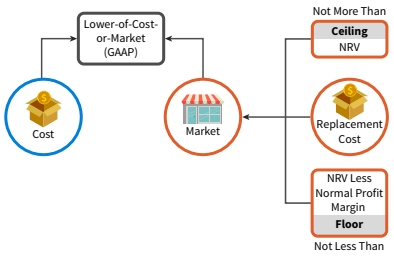


ILLUSTRATION 8.2 Inventory Valuation—Lower-of-Cost-or-Market

Companies usually value inventory on an item-by-item basis for two reasons.

1. Tax rules require that companies use an individual-item basis if it is practicable to do so.
2. The individual-item approach gives the most conservative valuation for balance sheet purposes.

① The ratio of cost to selling price for all the lots is $1 million divided by $2,500,000, or **40%**.

② Accordingly, if the total sales price of lots sold is $1,700,000, then the cost of the lots sold is 40% of $1,700,000, or **$680,000**.

③ The inventory of lots on hand is then $1 million less $680,000, or **$320,000**.

Illustrations

In each chapter, the authors carefully considered how the illustrations might best help students understand concepts.

Lists

Bulleted lists and numbered lists are used throughout, to help highlight key information.

Procedures

To help students understand how to apply accounting procedures, the authors have included a visual progression of steps.

Integrated Examples and Practice at the Point of Learning

Throughout the text, the authors have followed the approach of introducing a topic, showing an example(s), and then providing an opportunity for students to test their understanding.

Example 8.1
Net Realizable Value

FACTS Assume that **Starbucks Corporation** has unfinished inventory (unroasted coffee beans) with a cost of $950, a sales value of $1,000, estimated cost of completion of $50, and estimated selling costs of $200.

QUESTION What is the net realizable value of Starbuck's inventory?

SOLUTION

Inventory (estimated selling price)		$1,000
Less: Estimated cost of completion	$ 50	
Estimated selling costs	200	250
Net realizable value		$ 750

Starbucks thus reports inventory on its balance sheet at $750. In its income statement, Starbucks reports an inventory loss of $200 ($950 − $750).

Put It into Practice LO 8.1
Determine LCNRV

FACTS Gard Corporation has the following four items in its ending inventory.

Item	Cost	Selling Price	Costs to Complete and Sell
M	$2,000	$3,000	$ 900
N	5,000	8,000	3,050
O	4,400	6,000	1,375
P	3,200	5,000	1,170

Underlying Concepts

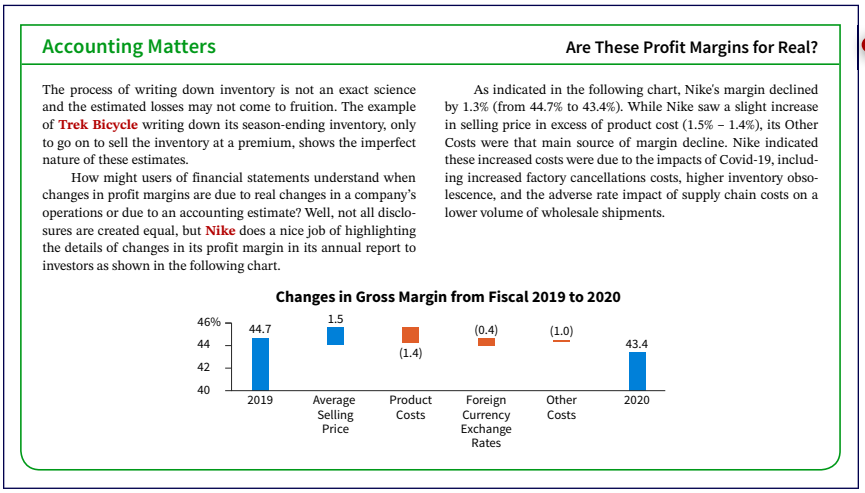
The Underlying Concepts highlight and explain major conceptual topics in the chapter.

Underlying Concepts
The objective of capitalizing interest is to obtain a measure of acquisition cost that reflects a company's total investment in the asset and to charge that cost to future periods benefited through depreciation expense.

It is common for a company to borrow money to construct an asset. Interest on the construction loan is considered part of the cost of the asset; without the loan, the asset could not be constructed. Plus, during construction, the asset is not generating revenues. Therefore, a company should record, or capitalize, these interest costs in the related asset account (see **Underlying Concepts**). **[2]** Once construction is complete, the asset is ready for its intended use such that it will begin generating revenues for the company. At this same time, the company should report any future interest as an expense.

To capitalize interest, companies consider three items:

1. Qualifying assets.
2. Capitalization period.
3. Amount to capitalize.



Accounting Matters — **Are These Profit Margins for Real?**

The process of writing down inventory is not an exact science and the estimated losses may not come to fruition. The example of **Trek Bicycle** writing down its season-ending inventory, only to go on to sell the inventory at a premium, shows the imperfect nature of these estimates.

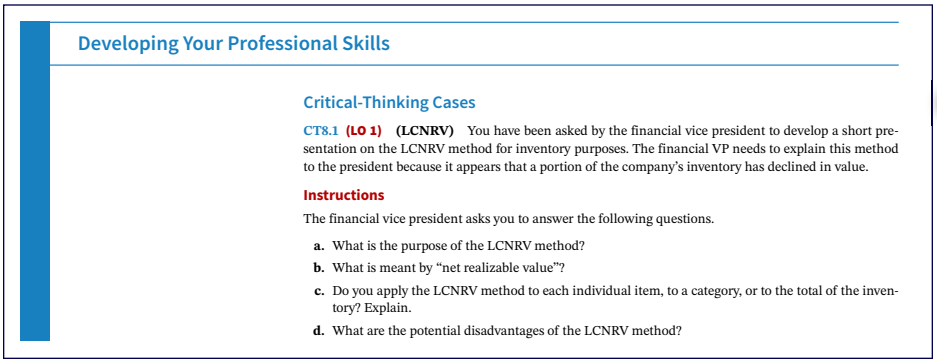
How might users of financial statements understand when changes in profit margins are due to real changes in a company's operations or due to an accounting estimate? Well, not all disclosures are created equal, but **Nike** does a nice job of highlighting the details of changes in its profit margin in its annual report to investors as shown in the following chart.

As indicated in the following chart, Nike's margin declined by 1.3% (from 44.7% to 43.4%). While Nike saw a slight increase in selling price in excess of product cost (1.5% – 1.4%), its Other Costs were that main source of margin decline. Nike indicated these increased costs were due to the impacts of Covid-19, including increased factory cancellations costs, higher inventory obsolescence, and the adverse rate impact of supply chain costs on a lower volume of wholesale shipments.

Changes in Gross Margin from Fiscal 2019 to 2020

Accounting Matters

The Accounting Matters boxes feature relatable real-world examples of how accounting is put into practice.



Developing Your Professional Skills

Critical-Thinking Cases

CT8.1 (LO 1) (LCNRV) You have been asked by the financial vice president to develop a short presentation on the LCNRV method for inventory purposes. The financial VP needs to explain this method to the president because it appears that a portion of the company's inventory has declined in value.

Instructions

The financial vice president asks you to answer the following questions.

a. What is the purpose of the LCNRV method?

b. What is meant by "net realizable value"?

c. Do you apply the LCNRV method to each individual item, to a category, or to the total of the inventory? Explain.

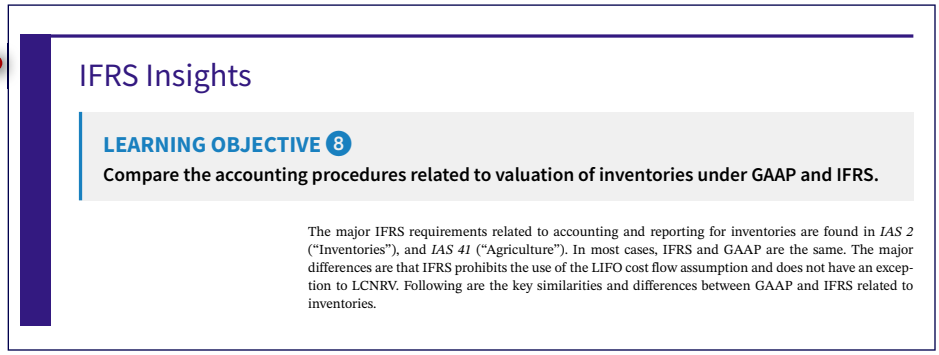
d. What are the potential disadvantages of the LCNRV method?

Emphasis on Critical Thinking

Critical-thinking skills are practiced through each chapter's Developing Your Professional Skills and Using Your Judgment end-of-chapter sections.

IFRS Insights

IFRS Insights offer students a quick overview of the similarities and differences between IFRS and GAAP for accounting topics. Additional IFRS Insights with assessment are available online. *Intermediate Accounting, IFRS Fourth Edition* exists as another resourse.



IFRS Insights

LEARNING OBJECTIVE 8

Compare the accounting procedures related to valuation of inventories under GAAP and IFRS.

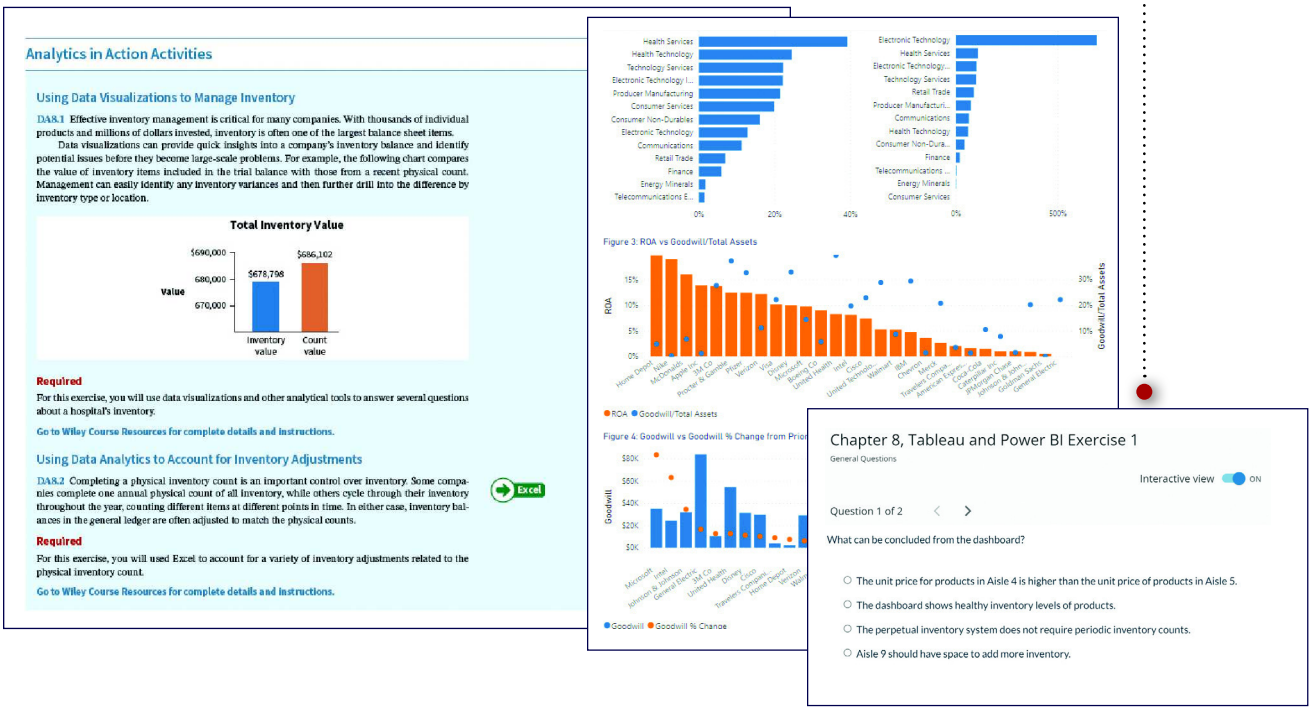
The major IFRS requirements related to accounting and reporting for inventories are found in *IAS 2* ("Inventories"), and *IAS 41* ("Agriculture"). In most cases, IFRS and GAAP are the same. The major differences are that IFRS prohibits the use of the LIFO cost flow assumption and does not have an exception to LCNRV. Following are the key similarities and differences between GAAP and IFRS related to inventories.

Today's accounting profession demands that students possess strong Excel and data analytics skills. To that end, each chapter includes:

- **Analytics in Action** feature, which demonstrates the relevance of data analytics to intermediate accounting topics.
- **Analytics in Action Activities**, which include both data visualizations (Tableau/PowerBI) and Excel-based problem sets.
- Excel-based end-of-chapter problem material.
- Gradable Excel in Wiley Course Resources.

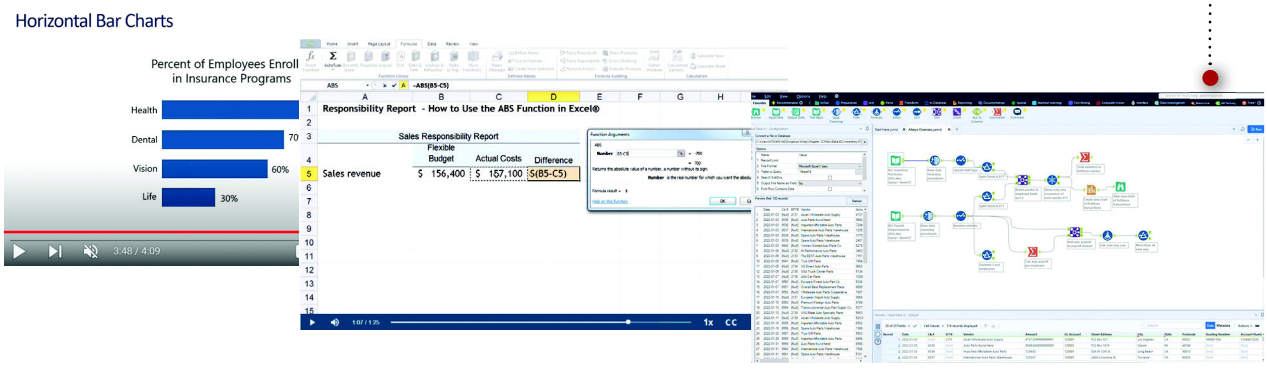
Assessment—Tableau, PowerBI, Excel

Analytics in Action Activities encourage students to work through a data analytics problem using Excel. Additional questions referenced in the text ask students to interpret data in visualizations.


Analytics in Action Activities
Using Data Visualizations to Manage Inventory
DA8.1 Effective inventory management is critical for many companies. With thousands of individual products and millions of dollars invested, inventory is often one of the largest balance sheet items.
Data visualizations can provide quick insights into a company's inventory balance and identify potential issues before they become large-scale problems. For example, the following chart compares the value of inventory items included in the trial balance with those from a recent physical count. Management can easily identify any inventory variances and then further drill into the difference by inventory type or location.
Total Inventory Value
$690,000
680,000
670,000
Value
$678,798
$686,102
Inventory value
Count value
Required
For this exercise, you will use data visualizations and other analytical tools to answer several questions about a hospital's inventory.
Go to Wiley Course Resources for complete details and instructions.
Using Data Analytics to Account for Inventory Adjustments
DA8.2 Completing a physical inventory count is an important control over inventory. Some companies complete one annual physical count of all inventory, while others cycle through their inventory throughout the year, counting different items at different points in time. In either case, inventory balances in the general ledger are often adjusted to match the physical counts.
Required
For this exercise, you will used Excel to account for a variety of inventory adjustments related to the physical inventory count.
Go to Wiley Course Resources for complete details and instructions.
Excel
Figure 3: ROA vs Goodwill/Total Assets
ROA
Goodwill/Total Assets
ROA
Goodwill/Total Assets
Figure 4: Goodwill vs Goodwill % Change from Prior
Goodwill
Goodwill
Goodwill % Change
Chapter 8, Tableau and Power BI Exercise 1
General Questions
Interactive view
ON
Question 1 of 2
What can be concluded from the dashboard?
The unit price for products in Aisle 4 is higher than the unit price of products in Aisle 5.
The dashboard shows healthy inventory levels of products.
The perpetual inventory system does not require periodic inventory counts.
Aisle 9 should have space to add more inventory.

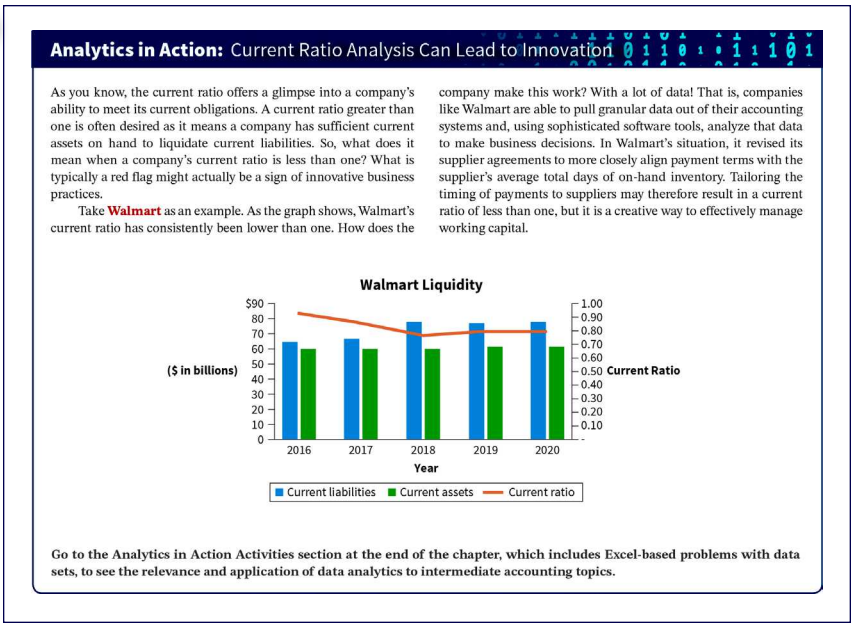
Video Resources for Tableau, Alteryx, and Excel

Students will have access to Wiley-prepared videos that will help them become familiar with and use data analytics software they will use in their careers.



Analytics in Action Insights

Application of intermediate accounting topics to data analytics are discussed throughout the text and in the Analytics in Action insight feature.



Analytics in Action: Current Ratio Analysis Can Lead to Innovation

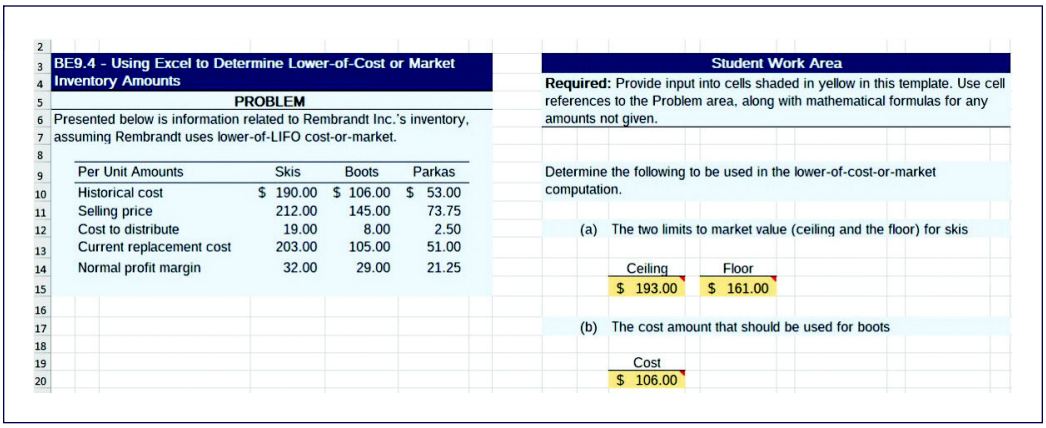
As you know, the current ratio offers a glimpse into a company's ability to meet its current obligations. A current ratio greater than one is often desired as it means a company has sufficient current assets on hand to liquidate current liabilities. So, what does it mean when a company's current ratio is less than one? What is typically a red flag might actually be a sign of innovative business practices.

Take **Walmart** as an example. As the graph shows, Walmart's current ratio has consistently been lower than one. How does the company make this work? With a lot of data! That is, companies like Walmart are able to pull granular data out of their accounting systems and, using sophisticated software tools, analyze that data to make business decisions. In Walmart's situation, it revised its supplier agreements to more closely align payment terms with the supplier's average total days of on-hand inventory. Tailoring the timing of payments to suppliers may therefore result in a current ratio of less than one, but it is a creative way to effectively manage working capital.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Gradable Excel

An understanding of how to use Excel functions and features helps students to ultimately use Excel for data analysis. Gradable Excel assesses student understanding of Excel functions.



BE9.4 - Using Excel to Determine Lower-of-Cost or Market Inventory Amounts

PROBLEM

Presented below is information related to Rembrandt Inc.'s inventory, assuming Rembrandt uses lower-of-LIFO cost-or-market.

Per Unit Amounts	Skis	Boots	Parkas
Historical cost	$ 190.00	$ 106.00	$ 53.00
Selling price	212.00	145.00	73.75
Cost to distribute	19.00	8.00	2.50
Current replacement cost	203.00	105.00	51.00
Normal profit margin	32.00	29.00	21.25

Student Work Area

Required: Provide input into cells shaded in yellow in this template. Use cell references to the Problem area, along with mathematical formulas for any amounts not given.

Determine the following to be used in the lower-of-cost-or-market computation.

(a) The two limits to market value (ceiling and the floor) for skis

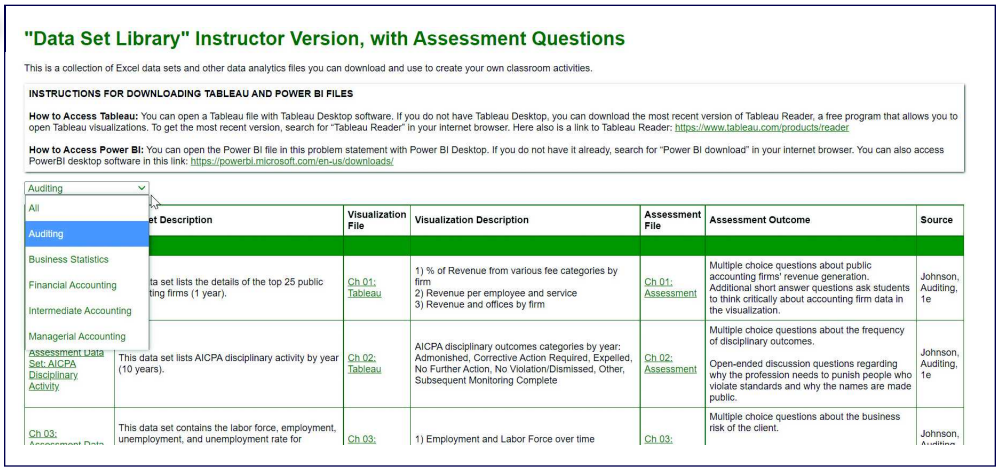
Ceiling	Floor
$ 193.00	$ 161.00

(b) The cost amount that should be used for boots

Cost
$ 106.00

Data Set Library

The data set library provides intermediate accounting instructors with access to Excel data sets, PowerBI files, Tableau files, and accompanying assessment questions used in other accounting courses.



"Data Set Library" Instructor Version, with Assessment Questions

This is a collection of Excel data sets and other data analytics files you can download and use to create your own classroom activities.

INSTRUCTIONS FOR DOWNLOADING TABLEAU AND POWER BI FILES

How to Access Tableau: You can open a Tableau file with Tableau Desktop software. If you do not have Tableau Desktop, you can download the most recent version of Tableau Reader, a free program that allows you to open Tableau visualizations. To get the most recent version, search for "Tableau Reader" in your internet browser. Here also is a link to Tableau Reader: https://www.tableau.com/products/reader

How to Access Power BI: You can open the Power BI file in this problem statement with Power BI Desktop. If you do not have it already, search for "Power BI download" in your internet browser. You can also access PowerBI desktop software in this link: https://powerbi.microsoft.com/en-us/downloads/

Auditing

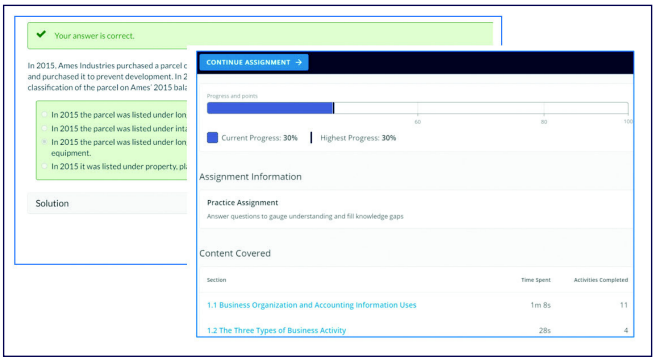
All
Auditing
Business Statistics
Financial Accounting
Intermediate Accounting
Managerial Accounting

	Visualization File	Visualization Description	Assessment File	Assessment Outcome	Source
	Ch 01: Tableau	1) % of Revenue from various fee categories by firm 2) Revenue per employee and service 3) Revenue and offices by firm	Ch 01: Assessment	Multiple choice questions about public accounting firms' revenue generation. Additional short answer questions ask students to think critically about accounting firm data in the visualization.	Johnson, Auditing, 1e
Assessment Data Set: AICPA Disciplinary Activity	This data set lists AICPA disciplinary activity by year (10 years).	Ch 02: Tableau	AICPA disciplinary outcomes categories by year: Admonished, Corrective Action Required, Expelled, No Further Action, No Violation/Dismissed, Other, Subsequent Monitoring Complete	Ch 02: Assessment	Multiple choice questions about the frequency of disciplinary outcomes. Open-ended discussion questions regarding why the profession needs to punish people who violate standards and why the names are made public.	Johnson, Auditing, 1e
Ch 03:	This data set contains the labor force, employment, unemployment, and unemployment rate for	Ch 03:	1) Employment and Labor Force over time	Ch 03:	Multiple choice questions about the business risk of the client.	Johnson,

Engaging Online Student Resources and Tools

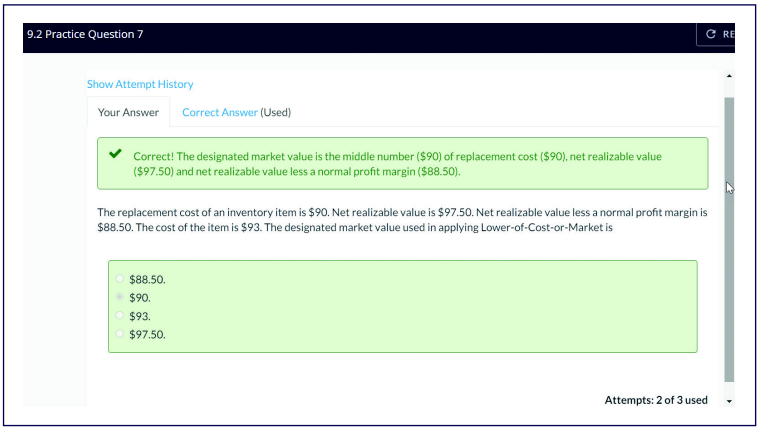
Adaptive Assignments

Adaptive Assignments ignite students' confidence to persist so that they can succeed in their courses and beyond. By continuously adapting to each student's needs and providing achievable goals with just-in-time instruction, Adaptive Assignments close knowledge gaps to accelerate learning.



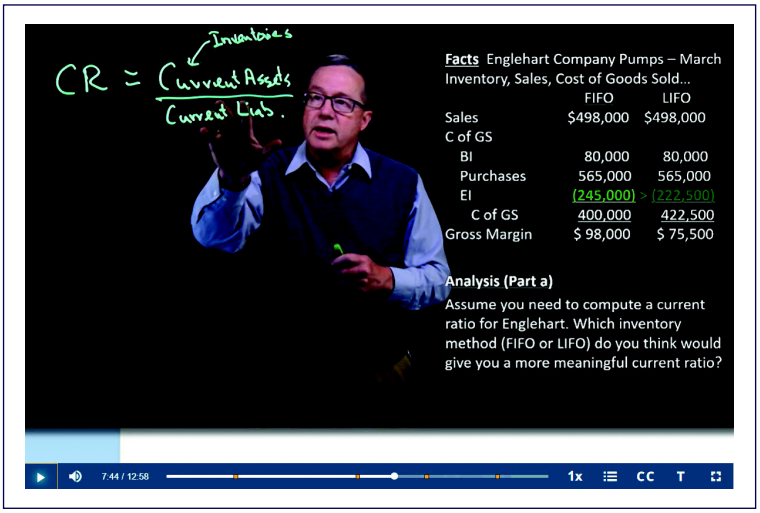
Practice Questions

Every chapter includes practice questions for each learning objective that students can review to assess their understanding of chapter topics.


9.2 Practice Question 7
Show Attempt History
Your Answer
Correct Answer (Used)
Correct! The designated market value is the middle number ($90) of replacement cost ($90), net realizable value ($97.50) and net realizable value less a normal profit margin ($88.50).
The replacement cost of an inventory item is $90. Net realizable value is $97.50. Net realizable value less a normal profit margin is $88.50. The cost of the item is $93. The designated market value used in applying Lower-of-Cost-or-Market is
$88.50.
$90.
$93.
$97.50.
Attempts: 2 of 3 used

Problem Walkthrough Lightboard Videos

Professor Warfield teaches students how to work through intermediate accounting problems.


CR = Current Assets / Current Liab.
Inventories
Facts Englehart Company Pumps – March Inventory, Sales, Cost of Goods Sold...
FIFO LIFO
Sales $498,000 $498,000
C of GS
BI 80,000 80,000
Purchases 565,000 565,000
EI (245,000) > (222,500)
C of GS 400,000 422,500
Gross Margin $ 98,000 $ 75,500
Analysis (Part a)
Assume you need to compute a current ratio for Englehart. Which inventory method (FIFO or LIFO) do you think would give you a more meaningful current ratio?
7:44 / 12:58
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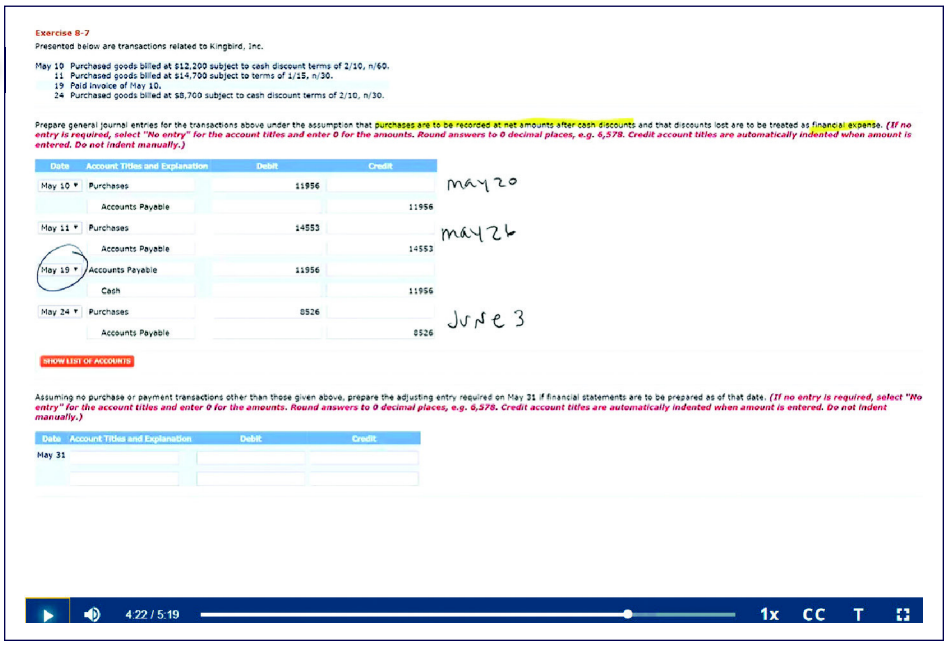
T

Solution Walkthrough Videos

Solution Walkthrough Videos explain how to solve questions similar to those assigned as homework. The videos can be enabled as question assistance in the Wiley online course. The library of solution walkthrough videos was expanded for the new edition of this intermediate accounting course.


Exercise 8-7
Presented below are transactions related to Kingbird, Inc.
May 10 Purchased goods billed at $12,200 subject to cash discount terms of 2/10, n/60.
11 Purchased goods billed at $14,700 subject to terms of 1/15, n/30.
19 Paid invoice of May 10.
24 Purchased goods billed at $8,700 subject to cash discount terms of 2/10, n/30.
Prepare general journal entries for the transactions above under the assumption that purchases are to be recorded at net amounts after cash discounts and that discounts lost are to be treated as financial expense. (If no entry is required, select "No entry" for the account titles and enter 0 for the amounts. Round answers to 0 decimal places, e.g. 6,578. Credit account titles are automatically indented when amount is entered. Do not indent manually.)
Date Account Titles and Explanation Debit Credit
May 10 Purchases 11956
Accounts Payable 11956
May 11 Purchases 14553
Accounts Payable 14553
May 19 Accounts Payable 11956
Cash 11956
May 24 Purchases 8526
Accounts Payable 8526
may 20
may 26
June 3
SHOW LIST OF ACCOUNTS
Assuming no purchase or payment transactions other than those given above, prepare the adjusting entry required on May 31 if financial statements are to be prepared as of that date. (If no entry is required, select "No entry" for the account titles and enter 0 for the amounts. Round answers to 0 decimal places, e.g. 6,578. Credit account titles are automatically indented when amount is entered. Do not indent manually.)
Date Account Titles and Explanation Debit Credit
May 31
4:22 / 5:19
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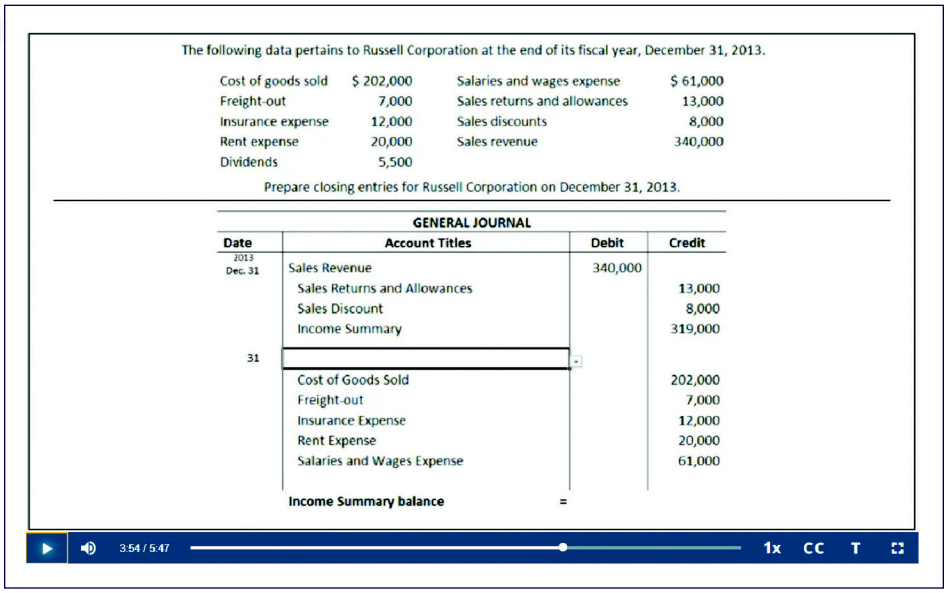
Applied Skills Videos

Applied Skills Videos review challenging topics and then walk through a solution to an application of the topics.


The following data pertains to Russell Corporation at the end of its fiscal year, December 31, 2013.
Cost of goods sold $ 202,000
Freight-out 7,000
Insurance expense 12,000
Rent expense 20,000
Dividends 5,500
Salaries and wages expense $ 61,000
Sales returns and allowances 13,000
Sales discounts 8,000
Sales revenue 340,000
Prepare closing entries for Russell Corporation on December 31, 2013.
GENERAL JOURNAL
Date Account Titles Debit Credit
2013
Dec. 31 Sales Revenue 340,000
Sales Returns and Allowances 13,000
Sales Discount 8,000
Income Summary 319,000
31
Cost of Goods Sold 202,000
Freight-out 7,000
Insurance Expense 12,000
Rent Expense 20,000
Salaries and Wages Expense 61,000
Income Summary balance =
3:54 / 5:47
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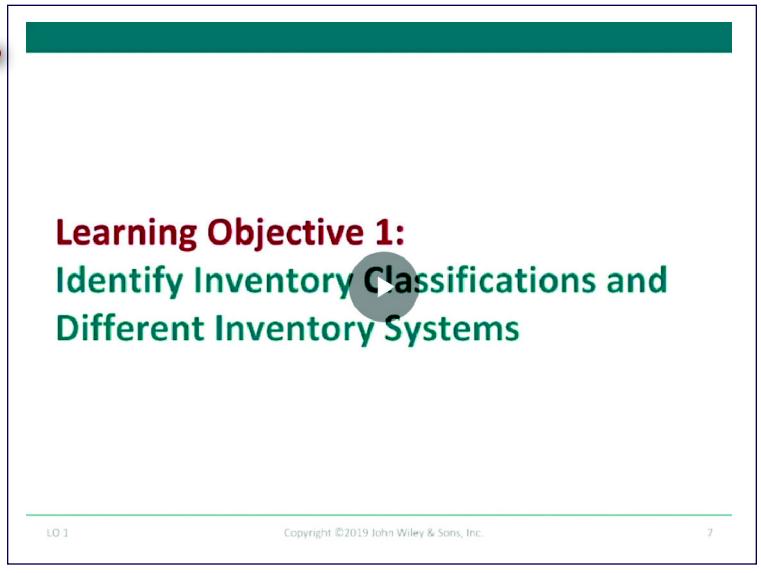
Narrated PowerPoint

Narrated PowerPoints review of important concepts and examples are offered for each chapter learning objective.


Learning Objective 1:
Identify Inventory Classifications and Different Inventory Systems
LO 1
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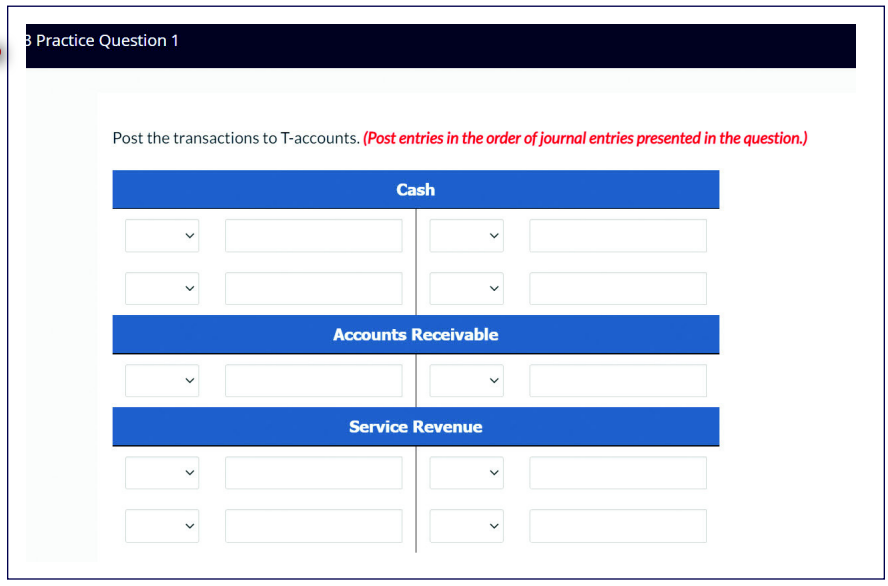
7

Chapter Zero—Remedial Practice

At the beginning of their intermediate accounting course, students can answer practice questions and adaptive practice questions that will walk them through a review of the accounting cycle.


3 Practice Question 1
Post the transactions to T-accounts. (Post entries in the order of journal entries presented in the question.)
Cash
Accounts Receivable
Service Revenue

Accounting News—Video and Article Updates

Up-to-date accounting videos and articles are posted to the Wiley accounting update site, www.wileyaccountingupdates.com. Many of these updates address topics related to intermediate accounting.

Instructor Resources

The **test bank** was updated with over 150 new multiple-choice assessment questions.

Accessible **PowerPoint** files were updated to address updates to the textbook.

A set of **companion gradable** exercises have been added to each chapter in the Wiley online course.

A selection of **Exercise B and Problem Set B** exercise and solutions are also available to instructors as PDF and Word files.

New questions were added across learning objectives in **adaptive practice**.

Other resources include a **computerized test bank, instructors manual, checklist of key figures, Excel templates**, and more.

Student Assessment

Each chapter of *Intermediate Accounting* has over 300 assessment questions that help students stay engaged and on track.

End-of-Chapter Assessment

Questions and Problems

Each *Intermediate Accounting* text chapter concludes with over 40 assessment questions and problems that help gauge students' understanding and ability to apply intermediate accounting concepts, as follows.

- **Short Answer Questions** are open-ended questions that require students to begin thinking critically about the chapter's topics.
- **Brief Exercises** focus on only one learning objective and quickly test students' overall understanding.
- **Exercises** present realistic brief situations that allow students to delve more deeply into each topic; often include several requirements.
- **Problems** span several learning objectives and more involved scenarios that require students to interpret and analyze realistic accounting scenarios.

To help students and instructors alike identify areas of need, questions are tagged with learning objectives, professional AICPA and AACSB outcome standards, Bloom's Taxonomy level, level of difficulty, and an estimated time of completion. Student performance can be linked to the gradebook found in the Wiley online homework system.

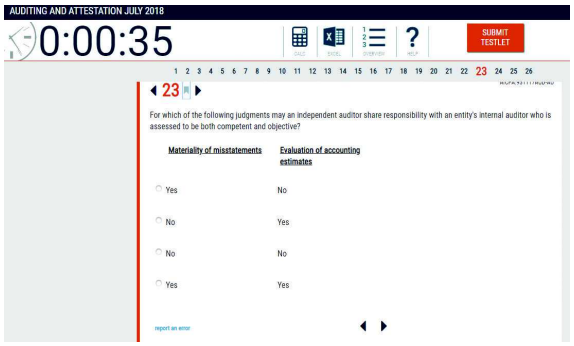
Test Bank

Over 150 NEW, more challenging application and analysis questions were added to this edition's test bank. Each chapter of the test bank has between 130 and 200 questions that can be assigned to students in an exam or as graded practice. Question types include true/false, multiple-choice (NEW multiple-select), fill-in-the-blank, and short answer questions. These questions are also categorized by learning objective and can be filtered by several different tags.

Preparing for the CPA Exam

For each chapter in the *Intermediate Accounting* course, students can access CPAexcel videos, CPA Exam Practice Questions in the Prometric™ Testing Interface, and Task-Based Simulations (TBSs), which are the primary form of assessment used by the American Institute of Certified Public Accountants (AICPA). These resources:

1. Reinforce understanding of course topics.
2. Demonstrate relevance to show students how the intermediate accounting content they are learning will be assessed on the CPA exam.
3. Build student confidence with early exposure to CPA exam questions.

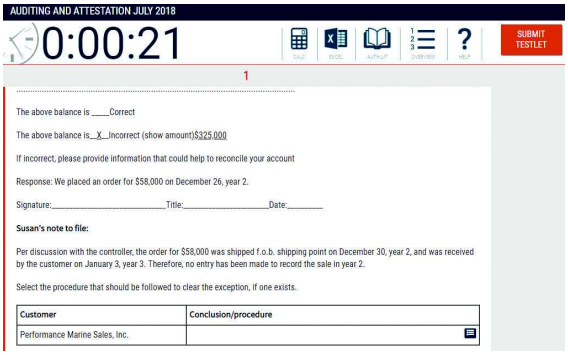


CPA Exam Practice Questions in the Prometric™ Testing Interface

Wiley partners with CPAexcel to provide CPA exam practice questions for each chapter that recreate the environment students will encounter on the CPA exam.

Task-Based Simulation in the Prometric™ Testing Interface

CPA simulations recreate the environment students will see on the CPA exam.

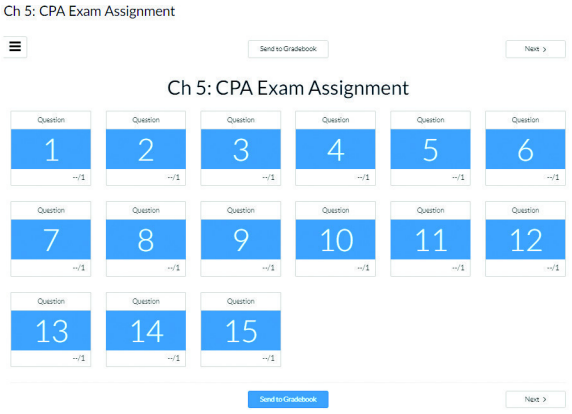

AUDITING AND ATTESTATION JULY 2018
0:00:21
SUBMIT TESTLET
1
The above balance is ____Correct
The above balance is__X__Incorrect (show amount)$325,000
If incorrect, please provide information that could help to reconcile your account
Response: We placed an order for $58,000 on December 26, year 2.
Signature:_____Title:_____Date:_____
Susan's note to file:
Per discussion with the controller, the order for $58,000 was shipped f.o.b. shipping point on December 30, year 2, and was received by the customer on January 3, year 3. Therefore, no entry has been made to record the sale in year 2.
Select the procedure that should be followed to clear the exception, if one exists.
Customer
Conclusion/procedure
Performance Marine Sales, Inc.

CPA Exam Video Lessons

Each chapter includes CPA exam text discussions and videos that provide students with insight into intermediate accounting topics commonly addressed on the CPA exams.

CPA Exam Assignments

Each chapter includes one CPA exam assignment that allows instructors to assign CPA multiple-choice questions. Student performance is tied to the gradebook.



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Meet Our Contributors

In this new edition of *Intermediate Accounting*, the authors are pleased to welcome the assistance of Laura Wiley and Kristen Fuhremann. Laura and Kristen assisted the authors with updating and streamlining chapter content. They also helped update the company references included throughout the text to be the most relevant and relatable to the student reader, focusing on well-known companies with tangible examples.

Another focus for these contributors was to bring more visibility to Excel and data analytics throughout the text. They created a new chapter appendix demonstrating how to complete various time value of money calculations using Excel functions. Illustrations of how to use these Excel functions were then carried throughout the text to reinforce the concepts and allow students to practice with Excel as they apply time value of money concepts to various accounting applications. Beyond Excel, they created Analytics in Action text boxes in each chapter, demonstrating the comprehensive impact of data analytics on all areas of intermediate accounting.

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Suggestions and comments from users of this text will be appreciated. Please feel free to contact any one of us.

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COMPANY INDEX

SUBJECT INDEX

LIST OF ACCOUNTS

CHAPTER 1

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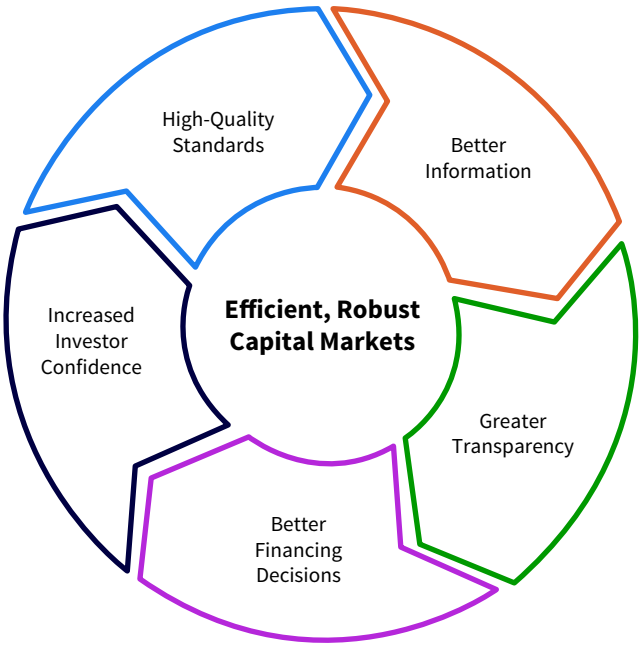
The Environment and Conceptual Framework of Financial Reporting

WHAT is the conceptual framework of financial reporting?

It's the process that a private and independent standard-setter—the Financial Accounting Standards Board (FASB)—uses to develop a set of generally accepted reporting standards. At the heart of this framework is the objective of financial reporting.



Source: Financial Accounting Foundation.

WHY is there a need for this conceptual framework?

It's because financial statement users—such as investors and creditors—rely on high-quality information to make better resource allocation decisions. Ultimately, as shown in the graphic, high-quality financial reporting results in increased investor confidence, which supports efficient capital markets.

For example, investors must be able to evaluate and compare financial reports across different industries and companies to determine where they will invest their capital. One recent study found that when accounting comparability is high, investors value $1 of higher-reported EPS at $6.76. In contrast, when accounting comparability is low, $1 of higher-reported EPS is valued at just $4.04.[1] That's quite a difference!

HOW are accounting standards established?

The FASB, with oversight by the Securities and Exchange Commission (SEC), develops accounting standards. In setting standards, the FASB is guided by the conceptual framework. The FASB follows a due process so that all stakeholders (investors, auditors, and companies) have an opportunity to provide input, thereby resulting in standards that are generally accepted.

[1]Ahmet Kurt, "The Importance of Accounting Comparability," *CFO.com* (July 6, 2020).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 1.1 Describe the financial reporting environment, major standard-setting bodies, and the meaning of generally accepted accounting principles (GAAP).	**1.1 Financial Reporting Environment** • Accounting and decision-usefulness • Need to develop standards • SEC • FASB • Other organizations • Codification	Put It into Practice LO 1.1 **Discuss Financial Reporting and Organizations**
LO 1.2 Describe the components and usefulness of the conceptual framework.	**1.2 Conceptual Framework** • Objective • Qualitative characteristics of accounting information • Elements	Put It into Practice LO 1.2 **Apply Qualitative Characteristics**
LO 1.3 Discuss the basic assumptions and principles of accounting.	**1.3 Assumptions and Principles** • Assumptions • Principles • Summary	Put It into Practice LO 1.3 **Identify Assumptions and Principles**
LO 1.4 Identify the major challenges in the financial reporting environment.	**1.4 Major Challenges in Financial Reporting** • Political environment • Expectations gap • Financial reporting issues • Ethical issues	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available online.

1.1 Financial Reporting Environment

LEARNING OBJECTIVE 1

Describe the financial reporting environment, major standard-setting bodies, and the meaning of generally accepted accounting principles (GAAP).

Understanding and trusting data are critical for decision-making purposes. In other words, is the information relevant and reliable, or is it confusing and unhelpful? If the former, we have a sound basis for good decision making. If the latter, the saying "garbage in [bad information] leads to garbage out [bad decision making]" is descriptive.

Accountants face many of the same issues but in a different setting. They also recognize that the information they develop and report must be relevant and reliable. However, that task is often not easy. For example, consider some of the following issues accountants faced during the Covid-19 pandemic.

- **Assessing whether companies were viable.** Due to the pandemic, some companies were in real financial trouble. To understand whether the company is going to make it, you must make predictions of what is going to happen in the future. Some companies had not operated for some time and were unsure when they would reopen. That left accountants trying to make estimates about these companies with very uncertain information.
- **Estimating liabilities.** Contract modifications took place as companies were unable to fulfill their existing contracts and therefore faced penalties. If a company has a contract to provide a specific product, fails to do so, and then has a liability for failure to perform, that must be considered. Again, accountants had to estimate the likelihood of this outcome with very uncertain information.
- **Determining inventory.** Companies with disrupted supply chains faced possible large losses related to inventory, particularly if the inventory was seasonable, perishable, or had a short-shelf life. With uncertain information about the future due to Covid-19, accountants had to develop estimates with the best information possible.

In that time of uncertainty, companies were asked to provide as much information as possible about how the coronavirus was affecting their operations and outlook. Therefore, while it is important that information presented be relevant and reliable, we must also recognize that some degree of uncertainty will exist.

Importance of Accounting and Decision-Usefulness

When making resource allocation or investing decisions under uncertainty, accounting becomes even more important. We know that resources are limited. As a result, businesses of all types try to conserve resources and ensure that they are used efficiently. In fact, efficient use of resources often determines whether a business survives. This fact places a substantial burden on the accounting profession to provide useful information for decision-making, often referred to as **decision-usefulness**. Let's next look at three different user groups to see how accounting information helps them make good decisions.

Owner/Manager

Chances are that many of you will be involved with a small business as an owner, employee, creditor, advisor, or auditor. Data from the **Small Business Administration** indicate that there are 31.7 million small businesses in the United States, with 60.6 million employees. In fact, small businesses (defined as less than 500 employees) account for 99.9% of all businesses in the United States.

To understand the importance of accounting in this type of setting, we examine a small business called Silva Restaurant. Basic questions that Silva needs to answer are:

- How successful was Silva in generating revenues and controlling expenses during the year? An **income statement** answers this question.
- How much compensation was distributed to the owners of Silva during the year and has the equity of the owners increased or decreased during the year? A **statement of owners' (stockholders') equity** answers this question.
- What does Silva own (its assets) and what does it owe (liabilities)? A **balance sheet** answers this question.
- Where did Silva obtain its cash during the year and how was that cash used? A **statement of cash flows** answers this question.

In other words, Silva's **financial statements** (income statement, statement of owners' (stockholders') equity, balance sheet, and statement of cash flows) are the principal means that a company like Silva uses to assess its financial performance.

Creditors

We now assume that Silva needs additional cash and wishes to borrow $250,000 from Morgan Bank. For Morgan to approve this loan, it needs to determine whether Silva will be able to pay back the $250,000 plus the interest on that amount. Silva's financial statements will be important in determining the answer. In most cases, the financial statements will be the starting point because:

- Morgan has to predict what will happen to Silva in the future since Morgan will be receiving interest and principal payments in that time period.
- Morgan must assess the amount, timing, and uncertainty of Silva's future cash flows.

This information can be derived from the income statement and the statement of cash flows.

Stockholders

Most large companies in the United States are corporations. The primary means of funding for these companies is the sale of common stock to investors. Having access to relevant and reliable **financial reporting** helps investors to:

- Assess the amounts, timing, and uncertainty of future cash inflows from dividends, interest, and proceeds from the sale or maturity of investments.
- Compare income and assets of different companies such as **Nike**, **Microsoft**, and **Berkshire Hathaway**.

When users can assess the relative return and risks associated with investment opportunities, they channel resources more effectively. **Illustration 1.1** shows how this process of capital allocation works.

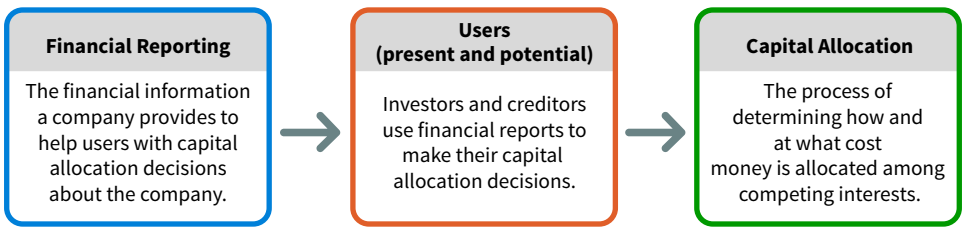

Financial Reporting
The financial information a company provides to help users with capital allocation decisions about the company.
Users (present and potential)
Investors and creditors use financial reports to make their capital allocation decisions.
Capital Allocation
The process of determining how and at what cost money is allocated among competing interests.

ILLUSTRATION 1.1 Capital Allocation Process

An effective process of capital allocation is critical to a healthy economy. It promotes productivity, encourages innovation, and provides an efficient and liquid market for buying and selling securities and obtaining and granting credit. Unreliable and irrelevant information leads to poor capital allocation, which adversely affects the securities markets.

The Need to Develop Standards

To enhance the decision-usefulness of accounting information, the accounting profession has developed a set of standards that are generally accepted and universally practiced. In the absence of financial statements prepared under these standards, readers of financial statements would have to familiarize themselves with every company's peculiar accounting and reporting practices. It would then be almost impossible to prepare statements that could be compared (see **Underlying Concepts**).

Underlying Concepts

Preparing financial statements according to accepted accounting standards contributes to the comparability of accounting information.

For example, as a prospective stockholder, you may want to evaluate how efficiently **Nike** uses its assets to generate sales relative to **Under Armour**. You may wonder how quickly **Restoration Hardware** turns over its high-end home furnishings inventory relative to **Williams-Sonoma**. These comparisons would not mean much without the common set of standards and procedures called **generally accepted accounting principles (GAAP)**. The term "generally accepted" can mean one of two things.

- A principle of reporting in a given area established by an authoritative accounting rule-making body.
- A given practice that has been accepted as appropriate because of its universal application over time.

Although there will always be debates regarding proposed and existing accounting standards, members of the financial community recognize GAAP as the standards that over time have proven to be most useful. You should recognize that the standard-setting process has worked well in the United States. As a former Secretary of the Treasury indicated, the single most important innovation shaping the capital markets was the idea of generally accepted accounting principles.

Two organizations are primarily responsible for the development of GAAP in the United States:

1. Securities and Exchange Commission (SEC).
2. Financial Accounting Standards Board (FASB).

Securities and Exchange Commission (SEC)

External financial reporting and auditing developed in tandem with the growth of the industrial economy and its capital markets. However, when the stock market crashed in 1929 and the nation's economy plunged into the Great Depression, there were calls for increased government regulation of business, especially financial institutions and the stock market.

As a result of these events, the federal government established the **Securities and Exchange Commission (SEC)**, a federal agency, to help develop and standardize financial information presented to stockholders. Specifically, the SEC:

- Administers the Securities Exchange Act of 1934 and several other acts.
- Requires most companies that issue securities to the public or are listed on a stock exchange to file audited financial statements with the SEC.
- Has broad powers to prescribe, in whatever detail it desires, the accounting practices and standards to be employed by companies that fall within its jurisdiction.

The SEC currently exercises oversight over 12,000 companies that are listed on the major exchanges (e.g., the New York Stock Exchange and the Nasdaq).

Accounting Matters — Global Markets

The SEC's Office of International Affairs is closely focused on cross-border investing, working with a global network of securities regulators all over the world. The International Organization of Securities Commissions (IOSCO), established in 1987, consists of more than 100 securities regulatory agencies or securities exchanges from all over the world.

Public/Private Partnership

At the time the SEC was created, no group—public or private—issued accounting standards. The SEC encouraged the creation of a private standard-setting body because it believed that the private sector had the appropriate resources and talent to achieve this daunting task. Presently, accounting standards are developed in the private sector by the Financial Accounting Standards Board (FASB).

The SEC has affirmed its support for the FASB by indicating that financial statements conforming to standards set by the FASB are presumed to have substantial authoritative support. In short, the **SEC requires registrants to adhere to GAAP as developed by the FASB**. In its reports to Congress, the SEC indicated that "it continues to believe that the initiative for establishing and improving accounting standards should remain in the private sector, subject to Commission oversight."

SEC Oversight

The SEC's partnership with the private sector works well. The SEC acts with remarkable restraint in the area of developing accounting standards. Generally, **the SEC relies on the FASB to develop accounting standards**.

The SEC's involvement in the development of accounting standards varies. For example, the SEC may:

- Reject a standard proposed by the private sector.
- Prod the private sector into taking quicker action on certain reporting problems, such as the reporting of derivative instruments.
- Communicate problems to the FASB, respond to FASB exposure drafts, and provide the FASB with counsel and advice upon request.

The SEC's mandate is to establish accounting principles, which it has delegated to the private sector (the FASB). Therefore, the private sector must listen carefully to the views of the SEC. In some sense, the FASB and others, such as companies and auditors in the private sector, are both the formulators and the implementors of the standards.[2]

However, when the private sector fails to address accounting problems as quickly as the SEC would like, the partnership between the SEC and the private sector can be strained. This occurred in the deliberations on the accounting for business combinations and intangible assets. Other examples include concerns over the accounting for off-balance-sheet special-purpose entities. Examples include the failure of **Enron** and the subprime crises that led to the failure of **IndyMac Bank**.

[2]One writer described the relationship of the FASB and SEC and the development of financial reporting standards using the analogy of a pearl. The pearl (a financial reporting standard) "is formed by the reaction of certain oysters (FASB) to an irritant (the SEC)—usually a grain of sand—that becomes embedded inside the shell. The oyster coats this grain with layers of nacre, and ultimately a pearl is formed. The pearl is a joint result of the irritant (SEC) and oyster (FASB); without both, it cannot be created." John C. Burton, "Government Regulation of Accounting and Information," *Journal of Accountancy* (June 1982).

Enforcement

As we indicated earlier, companies listed on a stock exchange must submit their financial statements to the SEC. If the SEC believes that an accounting or disclosure irregularity exists regarding the form or content of the financial statements, it sends a deficiency letter to the company. If the company does not resolve the issue, the SEC may issue a "stop order," which prevents the registrant from issuing or trading securities on the exchanges.

The Department of Justice may also file criminal charges for violations of certain laws. The SEC process, private sector initiatives, and civil and criminal litigation help to ensure the integrity of financial reporting for public companies.

Accounting Matters — Private Company Perspectives

Consider companies like **Trek Bicycle**, **SC Johnson**, or **Publix Super Markets**, none of which are publicly traded on a stock exchange. Are these companies required to report their financial statements in accordance with GAAP? Most likely, yes! Even though these private companies are not accountable to the SEC, most private companies are accountable to their owners and creditors.

For a company like Trek, it is highly likely that the company borrows money from a bank to help fund its operations, investments, expansions, and so on. As its creditor, the bank will require Trek to provide audited financial statements in accordance with GAAP at least annually. So, while the SEC maintains the integrity of financial reporting for public companies, that does not mean that private companies are off the hook.

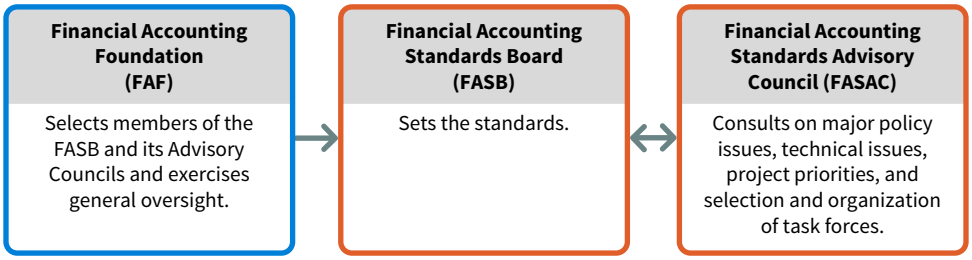
Financial Accounting Standards Board (FASB)

The major standard-setting organization in the private sector is the **Financial Accounting Standards Board (FASB)**. The mission of the FASB is as follows.

> To establish and improve standards of financial accounting and reporting for the guidance and education of the public, which includes issuers, auditors, and users of financial information.

The FASB operates with oversight from the **Financial Accounting Foundation (FAF)**. In addition to research and support of its own staff, the FASB relies on the expertise of various task force groups formed for various projects and on the **Financial Accounting Standards Advisory Council (FASAC)**. The FASAC consults with the FASB on major policy and technical issues and also helps select task force members. **Illustration 1.2** shows the current organizational structure for the development of financial reporting standards.[3]

ILLUSTRATION 1.2
Organizational Structure for Setting Accounting Standards


Financial Accounting Foundation (FAF)
Selects members of the FASB and its Advisory Councils and exercises general oversight.
Financial Accounting Standards Board (FASB)
Sets the standards.
Financial Accounting Standards Advisory Council (FASAC)
Consults on major policy issues, technical issues, project priorities, and selection and organization of task forces.

[3]Other advisory groups, such as the Investors Advisory Committee (IAC), the Not-for-Profit Advisor Committee (NAC), and the more recently established Private Company Council (PCC), share their views and experience with the FASB on matters related to projects on the Board's agenda, from the perspective of various constituencies and/or in areas of specific expertise.

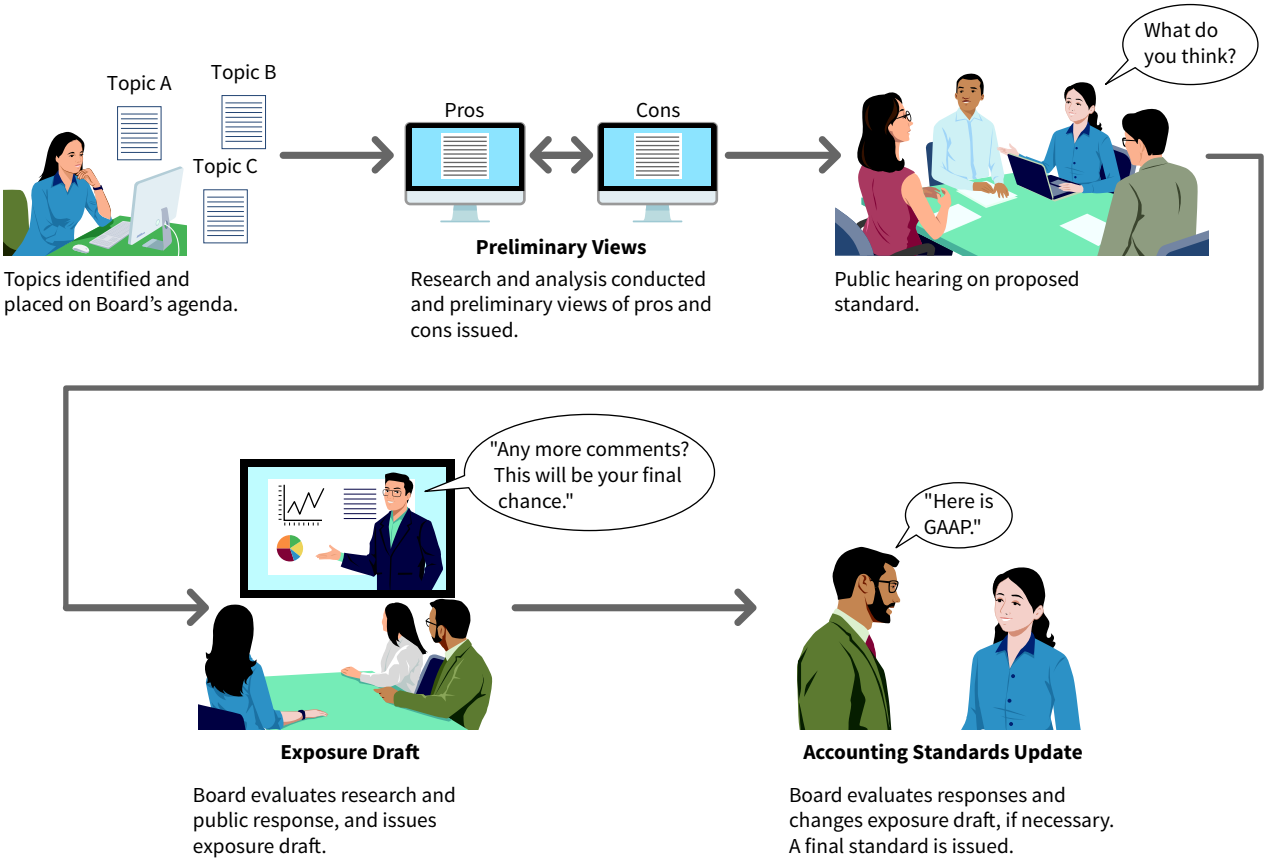
Due Process

In establishing financial accounting standards, the FASB relies on two basic premises. The FASB should:

1. Be responsive to the needs and viewpoints of the entire economic community, not just the public accounting profession.
2. Operate in full view of the public through a **due process** system that gives interested persons ample opportunity to make their views known.

To ensure the achievement of these goals, the FASB follows specific steps to develop a typical FASB pronouncement, as **Illustration 1.3** shows.

ILLUSTRATION 1.3 The Due Process System of the FASB


Topic A
Topic B
Topic C
Topics identified and placed on Board's agenda.
Pros
Cons
Preliminary Views
Research and analysis conducted and preliminary views of pros and cons issued.
What do you think?
Public hearing on proposed standard.
"Any more comments? This will be your final chance."
Exposure Draft
Board evaluates research and public response, and issues exposure draft.
"Here is GAAP."
Accounting Standards Update
Board evaluates responses and changes exposure draft, if necessary. A final standard is issued.

The passage of new FASB guidance in the form of an Accounting Standards Update requires the support of four of the seven Board members. FASB pronouncements are considered GAAP and are thereby binding in practice.

Types of Pronouncements

The FASB issues two major types of pronouncements:

1. Accounting Standards Updates (often referred to as **financial accounting standards**).
2. Financial Accounting Concepts.

Accounting Standards Updates The FASB issues accounting pronouncements through **Accounting Standards Updates** (Updates). These Updates amend the Accounting Standards Codification, which represents the source of authoritative accounting standards, other

than standards issued by the SEC (we discuss the Codification in more detail later in the chapter). Each Update consists of the following

- An explanation of how the Codification has been amended.
- Information to help the reader understand the changes.
- A date for when the changes will be effective.

Common forms of amendments are accounting standards issued that address a broad area of accounting practice (such as the accounting for leases) or interpretations that modify or extend existing standards.

Financial Accounting Concepts To provide a framework for the development of financial accounting standards, the FASB has issued a series of **Statements of Financial Accounting Concepts (SFAC)** as part of its conceptual framework project. (The SFAC can be accessed at the FASB website.)

The series sets forth fundamental objectives and concepts that the Board uses in developing standards of financial accounting and reporting. The Board has developed a cohesive set of interrelated concepts—a conceptual framework—that will serve as tools for solving existing and emerging problems in a consistent manner. Unlike an **Accounting Standards Update**, **a Statement of Financial Accounting Concepts does not establish GAAP**. Concepts statements, however, pass through the same due process system (preliminary views, public hearing, exposure draft, etc.) as do standards updates. (We discuss the conceptual framework in more detail later in the chapter.)

Other Organizations Involved

Global View

Although global convergence for standard-setting appears unlikely at the present time, we provide a discussion of the similarities and differences between IFRS and GAAP at the end of the chapter in the *IFRS Insights* section.

Two other organizations have also had a major role in standard-setting. The first is the **American Institute of Certified Public Accountants (AICPA)**, which is the national organization of practicing certified public accountants (CPAs). In the early years of standard-setting, the SEC urged the AICPA to develop accounting standards through various committees. Over time, however, due to the voluntary nature of these committees, it was recognized that broader representation coupled with a full-time, well-paid organization like the FASB was needed. As a result, the AICPA no longer has formal involvement in the accounting standard setting process.

The other organization is the **International Accounting Standards Board (IASB)**, which sets the **International Financial Reporting Standards (IFRS)** used in over 120 countries. Everyone seems to agree that the FASB and the IASB need to work together toward the goal of high-quality global accounting standards, which would result in comparability over time. They have, for example, worked together in developing similar standards for leasing and revenue recognition (see **Global View**).

FASB Codification

Historically, the documents that comprised GAAP varied in format, completeness, and structure. In some cases, these documents were inconsistent and difficult to interpret. As a result, financial statement preparers sometimes were not sure whether they had the right GAAP. Determining what was authoritative and what was not became difficult.

In response to these concerns, the FASB developed the **Financial Accounting Standards Board Accounting Standards Codification** (or more simply, "the Codification"). The FASB's goals in developing the Codification are to:

- Provide, in one place, all the authoritative literature related to a particular topic.
- Simplify user access to all authoritative U.S. GAAP.
- Establish the way GAAP is documented, presented, and updated.
- Eliminate nonessential information such as redundant document summaries and historical content.

In short, the Codification integrates and synthesizes existing GAAP; it does not create new GAAP. It creates a single level of GAAP, which is considered authoritative. All other accounting literature is considered non-authoritative.[4]

To provide easy access to this Codification, the FASB also developed the **Financial Accounting Standards Board Codification Research System (CRS)**. CRS is an online, real-time database that provides easy access to the Codification. The Codification and the related CRS provide a topically organized structure, subdivided into topic, subtopics, sections, and paragraphs, using a numerical index system.

For purposes of referencing authoritative GAAP material in this text, we will use the Codification framework. For example, to determine GAAP for accounting for loans and trade receivables not held for sale subsequent to initial measurement, here is how the Codification framework is cited (see also **Illustration 1.4**).

Topic	Go to FASB ASC 310 to access the Receivables topic.
Subtopics	Go to FASB ASC 310-10 to access the Overall subtopic of Topic 310.
Sections	Go to FASB ASC 310-10-35 to access the Subsequent Measurement section of Subtopic 310-10.
Paragraph	Go to FASB ASC 310-10-35-47 to access the Loans and Trade Receivables not Held for Sale paragraph of Section 310-10-35.

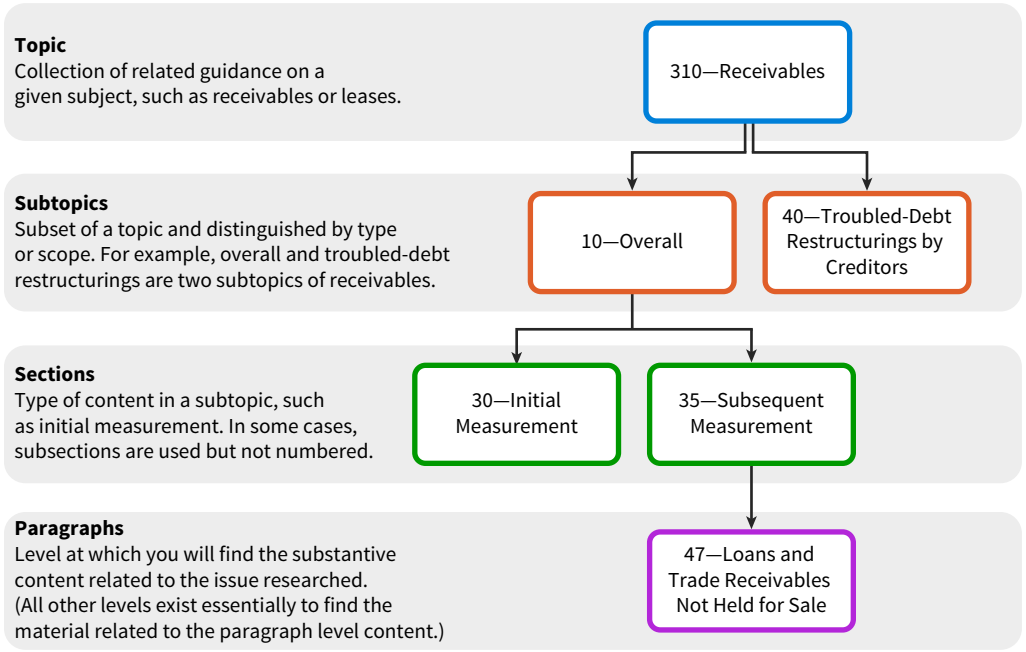

Topic
Collection of related guidance on a given subject, such as receivables or leases.
310—Receivables
Subtopics
Subset of a topic and distinguished by type or scope. For example, overall and troubled-debt restructurings are two subtopics of receivables.
10—Overall
40—Troubled-Debt Restructurings by Creditors
Sections
Type of content in a subtopic, such as initial measurement. In some cases, subsections are used but not numbered.
30—Initial Measurement
35—Subsequent Measurement
Paragraphs
Level at which you will find the substantive content related to the issue researched. (All other levels exist essentially to find the material related to the paragraph level content.)
47—Loans and Trade Receivables Not Held for Sale

ILLUSTRATION 1.4 FASB Codification Framework

What happens if the Codification does not cover a certain type of transaction or event? In that case, other accounting literature should be considered, such as FASB Concept Statements, IFRS, and other professional literature. This will happen only rarely.[5]

[4]The FASB Codification can be accessed at the FASB website. Access to the full functionality of the Codification Research System requires a subscription; reduced-price academic access is available through the American Accounting Association. Prior to the Codification, the profession relied on *FASB 162,* "The Hierarchy of Generally Accepted Accounting Principles," which defined the meaning of generally accepted accounting principles. In that document, certain documents were deemed more authoritative than others, which led to various levels of GAAP. Fortunately, the Codification does not have different levels of GAAP.

[5]To increase the usefulness of the Codification for public companies, relevant authoritative content issued by the SEC is included in the Codification. In the case of SEC content, an "S" precedes the section number.

For individuals (like you) attempting to learn GAAP, the Codification will be invaluable. It streamlines and simplifies how to determine what GAAP is, which will lead to better financial accounting and reporting. We provide references to the Codification throughout this text, using a numbering system. For example, a bracket with a number, such as **[1]**, indicates that the citation to the FASB Codification can be found in the **FASB Codification References** section near the end of the chapter.

Accounting Matters — Is There a Rule for That?

It is, in fact, rare that the Codification does not cover a certain type of transaction. However, that was the exact scenario the financial reporting community found themselves in during 2020 (surprised?) with loans provided by the **Small Business Administration** as part of the Paycheck Protection Program (PPP). To support businesses during the global pandemic brought on by Covid-19, the U.S. government issued potentially forgivable loans to eligible companies. While the nature of these loans varies, the substance in many cases indicated that the loan was actually a government grant.

As it turns out, GAAP does not have specific guidance on accounting for government grants made to business entities (outside grants made in the form of a tax credit). This required the reporting community to look elsewhere for guidance, leading some companies to follow International Accounting Standard (IAS) 20, *Accounting for Government Grants and Disclosure of Government Assistance.*

Put It into Practice LO 1.1

Discuss Financial Reporting and Organizations

FACTS The first part of this chapter discusses general concepts related to financial reporting and various organizations involved in the standard-setting process. Here are some terms used in the first part of the chapter.

a. Financial Accounting Standards Board
b. American Institute of Certified Public Accountants
c. Generally accepted accounting principles
d. Securities and Exchange Commission
e. International Accounting Standards Board
f. Public/private partnership
g. Codification
h. Statements of Financial Accounting Concepts

INSTRUCTIONS

Describe the significance of each of the items as it relates to financial reporting.

SOLUTION

a. Financial Accounting Standards Board: the U.S. organization established to improve standards of financial reporting for the guidance and education of the public, which includes issuers, auditors, and users of the financial statements.
b. American Institute of Certified Public Accountants: the national professional organization of practicing certified public accountants.
c. Generally accepted accounting principles: GAAP is the common set of standards and protocols either established by an authoritative accounting rule-making body or accepted as appropriate because of its universal application in practice.
d. Securities and Exchange Commission: the SEC is a federal agency that administers the Securities Act of 1934 and other acts. Most companies that issue securities to the public or are listed on the stock exchanges are required to file audited GAAP financial statements with the SEC.
e. International Accounting Standards Board: the IASB is the international organization established to improve standards of financial reporting for the guidance and education of the public, which includes issuers, auditors, and users of the financial statements. Their statements apply to most countries outside the United States.
f. Public/private partnership: reflects the SEC's support for the FASB by indicating that financial statements conforming to standards by the FASB are presumed to have authoritative support.
g. Codification: provides in one place all the authoritative accounting literature related to a topic.
h. Statements of Financial Accounting Concepts: the series that sets forth fundamental objectives and concepts that the FASB uses in developing standards of financial accounting and reporting.

1.2 Conceptual Framework

LEARNING OBJECTIVE 2

Describe the components and usefulness of the conceptual framework.

As noted earlier, a **conceptual framework** establishes the concepts that underlie financial reporting. A conceptual framework is a coherent system of concepts that flow from an objective. The objective identifies the purpose of financial reporting. The other concepts provide guidance on:

1. Identifying the boundaries of financial reporting.
2. Selecting the transactions, other events, and circumstances to be represented.
3. Determining how transactions and events should be recognized and measured.
4. Determining how transactions and events should be summarized and reported.[6]

Accounting Matters **What's Your Principle?**

There has been no shortage of accounting scandals to highlight the need for a strong conceptual framework, including some of the more notable failures such as **Enron** and **Lehman Brothers**. In both cases, the companies were able to remove, or keep debt off, their balance sheets by carefully structuring transactions to achieve a desired accounting treatment, even if that accounting treatment did not reflect the transactions' true nature.

To restore public confidence in the financial reporting process, many have argued that standard setters should move toward principles-based rules. They believe that companies exploited the detailed provisions in rules-based pronouncements to manage accounting reports, rather than report the economic substance of transactions. Under principles-based rules, hopefully top management's financial reporting focus will shift from demonstrating compliance with rules to demonstrating that a company has achieved the objective of financial reporting.

Objective

The **objective of financial reporting** serves as the foundation of the conceptual framework. What is the objective, or purpose, of financial reporting? It is to provide financial information about the reporting entity that is **useful to present and potential equity investors, lenders, and other creditors in making decisions about providing resources to the entity.**[7]

Think about the types of decisions that investors and lenders are making about companies.

- Investors decide whether to buy, sell, or hold stock in a company.
- Lenders decide whether to lend money to a company and at what interest rate and for how long.

To make effective decisions, these groups need information to help them assess a company's future net cash flows which will support loan payments and/or provide a return to investors.

[6]As indicated earlier, the conceptual framework and any changes to it pass through the same due process (discussion paper, public hearing, exposure draft, etc.) as do the other FASB pronouncements, the framework is not authoritative. That is, the framework does not define standards for any particular measurement or disclosure issue, and nothing in the framework overrides any specific FASB pronouncement that is included in the Codification.

[7]"Chapter 1, The Objective of General Purpose Financial Reporting," *Statement of Financial Accounting Concepts No. 8* (Norwalk, Conn.: FASB, September 2010).

To provide information to decision-makers, companies prepare general-purpose financial statements. **General-purpose financial statements** help users who lack the ability to demand all the financial information they need from a company and therefore must rely, at least partly, on the information provided in financial statements. However, it's important to note that users need reasonable knowledge of business and financial accounting matters to understand the information contained in financial statements.

Qualitative Characteristics of Accounting Information

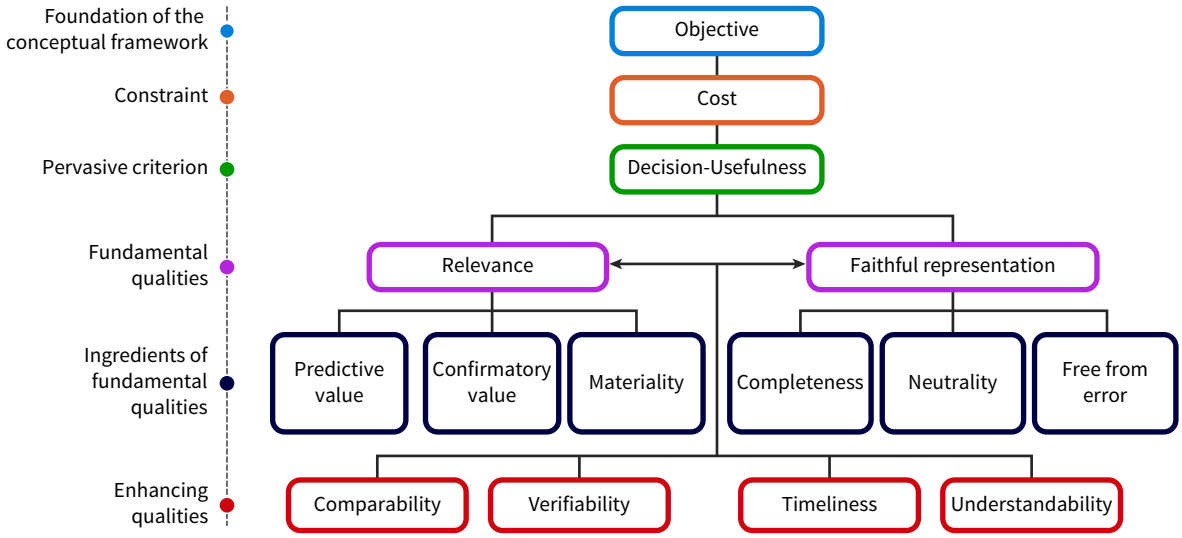
Consider these questions:

- Should companies like **Walt Disney** or **Kellogg's** provide information in their financial statements on how much it costs them to acquire their assets (historical cost basis) or how much the assets are currently worth (fair value basis)?
- Should **PepsiCo** combine and show as one company the seven main segments of its business, or should it report PepsiCo Beverages North America, Frito-Lay North America, Quaker Foods North America, Latin America, Europe, Africa, Middle East, South Asia, and Asia Pacific, Australia/New Zealand, China as seven separate segments?

How does a company choose an acceptable accounting method, the amount and types of information to disclose, and the format in which to present it? The answer: By determining **which alternative provides the most useful information for decision-making purposes (referred to as decision-usefulness)**. The FASB identified the **qualitative characteristics** of accounting information that distinguish better (more useful) information from inferior (less useful) information for meeting the objective of financial reporting.[8] In addition, the FASB identified a cost constraint as part of the conceptual framework (discussed later in the chapter).

As **Illustration 1.5** shows, the characteristics may be viewed as a hierarchy.

ILLUSTRATION 1.5 Hierarchy of Accounting Qualities

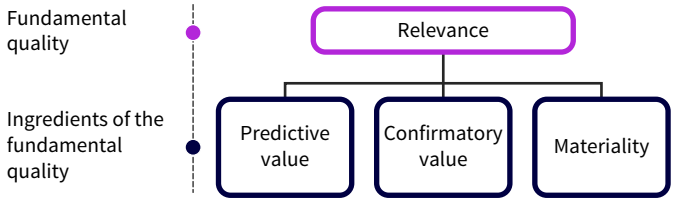


As indicated, qualitative characteristics are either fundamental, or ingredients of fundamental qualities, and enhancing, depending on how they affect the decision-usefulness of information. Regardless of classification, each qualitative characteristic contributes to the decision-usefulness of financial reporting information. However, providing useful financial information is limited by a constraint on financial reporting—cost should not exceed the benefits of a reporting practice.

[8] "Chapter 3, Qualitative Characteristics of Useful Financial Information," *Statement of Financial Accounting Concepts No. 8* (Norwalk, Conn.: FASB, September 2010).

Fundamental Quality—Relevance

Relevance is one of the two fundamental qualities that make accounting information useful for decision-making. Relevance and related ingredients of this fundamental quality are shown below.



As indicated, relevant accounting information must be capable of making a difference in a decision. Information with no bearing on a decision is irrelevant. Financial information is considered relevant when it is material and has predictive value, confirmatory value, or both.

Predictive Value Accounting information has **predictive value** if it helps users form their own expectations about the future. For example, if potential investors are interested in purchasing common shares in **UPS (United Parcel Service)**, they may analyze its current resources and claims to those resources, its dividend payments, and its past income performance to predict the amount, timing, and uncertainty of UPS's future cash flows.

Confirmatory Value Accounting information has **confirmatory value** if it helps users confirm or correct prior expectations. For example, when UPS issues its year-end financial statements, it confirms or changes past (or present) expectations based on previous evaluations. It follows that predictive value and confirmatory value are interrelated. In this regard, information about the current level and structure of UPS's assets and liabilities helps users predict its ability to take advantage of opportunities and to react to adverse situations. The same information helps to confirm or correct users' past predictions about that ability.

Materiality **Materiality** is a company-specific aspect of relevance. Information is material if omitting it or misstating it would influence decisions that users make on the basis of the reported financial information. An individual company determines whether information is material because both the nature and/or magnitude of the item(s) to which the information relates must be considered in the context of an individual company's financial report. Information is *immaterial*, and therefore irrelevant, if it would have no impact on a decision-maker. In short, **it must make a difference** or a company need not report it.[9]

Assessing materiality is one of the more challenging aspects of accounting because it requires evaluating both the **relative size and importance** of an item. For example, let's consider the two sets of numbers in **Illustration 1.6**, which indicate relative size.

ILLUSTRATION 1.6
Materiality Comparison

	Company A	Company B
Sales	$10,000,000	$100,000
Costs and expenses	9,000,000	90,000
Income from operations	$ 1,000,000	$ 10,000
Unusual gain	$ 20,000	$ 5,000

During the period in question, the revenues and expenses, and therefore the incomes from operations of Company A and Company B, are proportional. Meaning for both companies, income from operations is 10% of sales.

Each reported an unusual gain, but these amounts have different effects for each company.

- For Company A, the gain is only 2% of the operating income ($20,000 ÷ $1,000,000); if merged, it would not seriously distort the income figure.
- For Company B, a gain of $5,000 amounts to 50% of its income from operations; obviously, the inclusion of such an item in operating income would affect the amount of that income materially.

Thus, we see the importance of the **relative size** of an item in determining its materiality.

[9]Amendments to *SFAC No. 8: Conceptual Framework for Financial Reporting*, Chapter 3, "Qualitative Characteristics of Useful Financial Information" (August 2018). In this amendment, the FASB defined materiality to be consistent with the legal concept of materiality, as established in the securities laws. Specifically, information is material "if there is a substantial likelihood that the omitted or misstated item would have been viewed by a reasonable resource provider as having significantly altered the total mix of information."

Companies and their auditors generally adopt the rule of thumb that anything under 5% of net income is considered immaterial. This may be acceptable for an initial assessment of materiality, but other qualitative factors should also be considered. For example, the relative size of an item might be small, but what if that item:

- Converts a loss to a profit, or vice versa.
- Increases management compensation.
- Hides an illegal transaction, like a bribe.
- Preserves a positive earnings trend.

Ultimately, materiality judgments should be made in the context of the nature and the amount of an item. **Companies must consider both quantitative and qualitative factors in determining whether an item is material**.

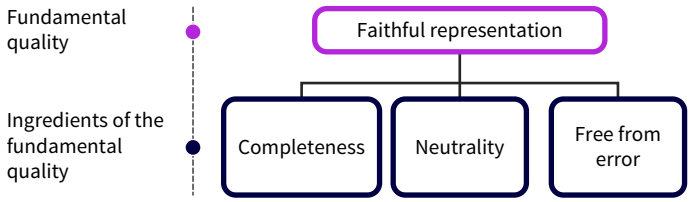
Accounting Matters — Living in a Material World

The word "material" can be found 114 times in **Starbucks**' recent annual report and 88 times in **Apple**'s. This is not unique to these companies but rather shows the impact that materiality has in the financial reporting process. When discussing the judgments and estimates involved in financial reporting, management concedes that actual results could differ **materially** from the estimates. Apple indicated that the adoption of the new revenue recognition standard did not have a **material** impact on previously reported amounts. Starbucks adopted new guidance on accounting for hedging relationships and indicated that the adoption of the new guidance did not have a **material** impact on their consolidated financial statements. Materiality is indeed a key ingredient of relevant financial information and one that preparers and auditors alike spend a significant amount of time evaluating.

Source: Apple, Inc. and Starbucks Corporation 10-K annual reports.

Fundamental Quality—Faithful Representation

Faithful representation is the second fundamental quality that makes accounting information useful for decision-making. Faithful representation and related ingredients of this fundamental quality are shown below.



Faithful representation means that the numbers and descriptions match what really existed or happened. Faithful representation is a necessity because most users have neither the time nor the expertise to evaluate the factual content of the information. For example, if **General Motors**' income statement reports sales of $162,300 million when sales were $145,588 million, then the statement fails to faithfully represent the proper sales amount. To be a faithful representation, information must be complete, neutral, and free of material error.

Completeness

Completeness means that all the information that is necessary for faithful representation is provided. An omission can cause information to be false or misleading and thus not be helpful to the users of financial reports. For example, when **Citigroup** fails to provide information needed to assess the value of its subprime loan receivables (toxic assets), the information is not complete and therefore not a faithful representation of their values.

Neutrality

Neutrality means that a company cannot select information to favor one set of interested parties over another. Unbiased information must be the overriding consideration. For example, in the notes to financial statements, tobacco companies such as **R.J. Reynolds** should not suppress information about the numerous lawsuits that have

been filed because of tobacco-related health concerns—even though such disclosure is damaging to the company.[10]

Free from Error An information item that is **free from error** will be a more accurate (faithful) representation of a financial item. For example, if **JPMorgan Chase** misstates its loan losses, its financial statements are misleading and not a faithful representation of its financial results. However, faithful representation does not imply total freedom from error or total exactness. Think of the many estimates in the financial statements that incorporate the use of management judgment. For example, management must estimate the amount of uncollectible accounts to determine bad debt expense. Also, the determination of depreciation expense requires estimation of useful lives of plant and equipment, as well as the salvage values of the assets.

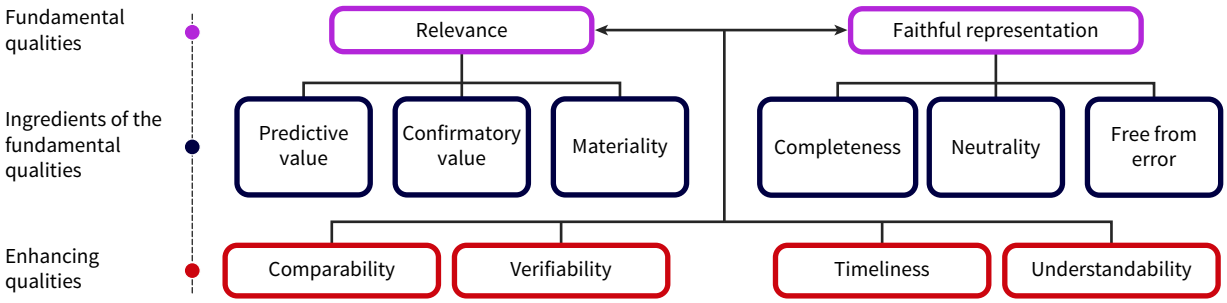
Accounting Matters — What's in It for Me?

Neutrality in rule-making has always been a difficult concept to achieve. Some argue that the FASB should not issue pronouncements that cause undesirable economic effects on an industry or company. Most recently, banks and credit unions actively lobbied against the recent standard on loan losses because they argued the rules would put them in an unfavorable light, thereby reducing their ability to make loans. We are glad the FASB stayed with its plan to issue these rules. Accounting rules (and the standard-setting process) must be free from bias, or we will no longer have credible financial statements. Without credible financial statements, individuals will no longer use this information.

An analogy demonstrates the point: Many individuals bet on boxing matches because such contests are assumed not to be fixed. But nobody bets on wrestling matches. Why? Because the public assumes that wrestling matches are rigged. If financial information is biased (rigged), the public will lose confidence and no longer use it.

Enhancing Qualities

Enhancing qualitative characteristics are complementary to the fundamental qualitative characteristics. These characteristics distinguish more-useful information from less-useful information. Enhancing characteristics, shown below, are comparability, verifiability, timeliness, and understandability.



Comparability Information that is measured and reported in a similar manner for different companies is considered comparable. **Comparability** enables users to identify the real similarities and differences in economic events between companies. For example, historically the accounting for pensions in Japan differed from that in the United States. In Japan, companies generally recorded little or no expense for these costs. U.S. companies recorded pension cost as incurred. As a result, it is difficult to compare and evaluate the financial results of **Toyota** or

[10]Sometimes, in practice, it has been acceptable to invoke prudence or conservatism as a justification for an accounting treatment under conditions of uncertainty. **Prudence** or **conservatism** means when in doubt, choose the solution that will be least likely to overstate assets or income and/or understate liabilities or expenses. The conceptual framework indicates that prudence or conservatism generally is in conflict with the quality of neutrality. This is because being prudent or conservative likely leads to a bias in the reported financial position and financial performance. In fact, introducing biased understatement of assets (or overstatement of liabilities) in one period frequently leads to overstating financial performance in later periods—a result that cannot be described as prudent. This is inconsistent with neutrality, which encompasses freedom from bias. Accordingly, the conceptual framework does not include prudence or conservatism as desirable qualities of financial reporting information. See "Chapter 3, Qualitative Characteristics of Useful Financial Information," *Statement of Financial Accounting Concepts No. 8* (Norwalk, Conn.: FASB, September 2010), paras. BC3.27–BC3.29.

Honda to **General Motors** or **Ford**. Investors can only make valid evaluations if comparable information is available.

Another type of comparability, **consistency**, is present when a company applies the same accounting treatment to similar events, from period to period. Through such application, the company shows consistent use of accounting standards. The idea of consistency does not mean, however, that companies cannot switch from one accounting method to another.[11] If a company changes methods, it must:

- Demonstrate that the newly adopted method is preferable to the old.
- Disclose in a note to the financial statements the nature and effect of the accounting change, as well as the justification for it, in the period in which it made the change.[12]

Verifiability **Verifiability** occurs when independent measurers, using the same methods, obtain similar results. Verifiability occurs in the following two situations.

1. Two independent auditors count **PepsiCo**'s inventory and arrive at the same physical quantity amount for inventory. Verification of an amount for an asset therefore can occur by simply counting the inventory.
2. Two independent auditors compute PepsiCo's inventory value at the end of the year using the FIFO method of inventory valuation. Verification may occur by checking the inputs (quantity and costs) and recalculating the outputs (ending inventory value) using the same accounting convention or methodology.

Timeliness **Timeliness** means having information available to decision-makers before it loses its capacity to influence decisions. Having relevant information available sooner can enhance its capacity to influence decisions. A lack of timeliness, on the other hand, can rob information of its usefulness. For example, if **Apple** waited to report its financial results until nine months after the period ended, the information is less useful for decision-making purposes.

Understandability Decision-makers vary widely in the types of decisions they make, how they make decisions, the information they already possess or can obtain from other sources, and their ability to process the information. For information to be useful, there must be a connection (linkage) between these users and the decisions they make. This link, **understandability**, is the quality of information that lets reasonably informed users see its significance. Understandability is enhanced when information is classified, characterized, and presented clearly and concisely.

For example, assume that **Meta** (previously **Facebook**) issues a three-month report that shows interim earnings have declined significantly. This interim report provides relevant and faithfully represented information for decision-making purposes. Some users, upon reading the report, decide to sell their shares. Other users, however, do not understand the report's content and significance. They are surprised when Meta declares a smaller year-end dividend and the share price declines. Although Meta presented highly relevant information that was a faithful representation, it was useless to those who did not understand it.

Thus, users of financial reports are assumed to have a **reasonable knowledge of business and economic activities**. In making decisions, users also should review and analyze the information with reasonable diligence. Information that is relevant and faithfully represented should not be excluded from financial reports solely because it is too complex or difficult for some users to understand without assistance.[13]

[11]Surveys indicate that users highly value consistency. They note that a change tends to destroy the comparability of data before and after the change. Some companies assist users to understand the pre-and post-change data. Generally, however, users say they lose the ability to analyze over time. GAAP guidelines (discussed in Chapter 21) on accounting changes are designed to improve the comparability of the data before and after an accounting change.

[12]These provisions are specified in "Reports on Audited Financial Statements," *Statement on Auditing Standards No. 58* (New York: AICPA, April 1988), par. 34.

[13]"Chapter 3, Qualitative Characteristics of Useful Financial Information," *Statement of Financial Accounting Concepts No. 8* (Norwalk, Conn.: FASB, September 2010), paras. QC30–QC31.

Elements

An important aspect of developing any theoretical structure is the body of basic **elements** or definitions to be included in it. Accounting uses many terms with distinctive and specific meanings. These terms constitute the language of business or the jargon of accounting. For example, one such term is **asset**. Is it merely something we own? Or is an asset something we have the right to use, as in the case of leased equipment? Or is it anything of value used by a company to generate revenues—in which case, should we also consider the managers of a company as an asset? The 10 elements identified by the FASB are as follows.

Elements of Financial Statements

Assets. Probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.

Liabilities. Probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.

Equity. Residual interest in the assets of an entity that remains after deducting its liabilities. In a business enterprise, the equity is the ownership interest.

Investments by owners. Increases in net assets (equity) of a particular enterprise resulting from transfers to it from other entities of something of value to obtain or increase ownership interests (or equity) in it. Assets are most commonly received as investments by owners, but that which is received may also include services or satisfaction or conversion of liabilities of the enterprise.

Distributions to owners. Decreases in net assets (equity) of a particular enterprise resulting from transferring assets, rendering services, or incurring liabilities by the enterprise to owners. Distributions to owners decrease ownership interests (or equity) in an enterprise.

Comprehensive income. Change in net assets (equity) of an entity during a period from transactions and other events and circumstances from nonowner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners.

Revenues. Inflows or other enhancements of assets of an entity or settlement of its liabilities (or a combination of both) during a period from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.

Expenses. Outflows or other using up of assets or incurrences of liabilities (or a combination of both) during a period from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations.

Gains. Increases in net assets (equity) from peripheral or incidental transactions of an entity and from all other transactions and other events and circumstances affecting the entity during a period except those that result from revenues or investments by owners.

Losses. Decreases in net assets (equity) from peripheral or incidental transactions of an entity and from all other transactions and other events and circumstances affecting the entity during a period except those that result from expenses or distributions to owners.[14]

The FASB classifies the elements into two distinct groups.

1. The first group of three elements—assets, liabilities, and equity—describes amounts of resources and claims to resources at a **moment in time**.
2. The other seven elements describe transactions, events, and circumstances that affect a company during a **period of time**.

The first group, affected by elements of the second group, provides at any time the cumulative result of all changes. This interaction is referred to as "articulation." That is, key figures in one financial statement correspond to balances in another. We will explain and examine each of these elements in more detail in later chapters.

[14]"Elements of Financial Statements," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: FASB, December 1985), pp. ix and x. The FASB recently issued a new chapter of the Conceptual Framework ["Chapter 4, Elements of Financial Statements," *Statement of Financial Accounting Concepts No. 8* (Norwalk, Conn.: FASB, December 2021)]. This chapter introduces rewording of definitions for some elements (e.g., assets and liabilities) to (1) make the language internally consistent and (2) eliminate repetition. These revised definitions also align with definitions recently introduced in IFRS. Although the substance of the updated definitions are the same as the previous definitions, we provide a brief reference for the updated definitions at Wiley Course Resources.

Put It into Practice LO 1.2
Apply Qualitative Characteristics

FACTS A local broker has called you with a tip about an investment in bonds of a company that she feels is about to take off. The company, AROD, sells sports memorabilia online. The bonds being issued by AROD mature in 15 years and promise a 10% yield. You tell the broker that before investing in this hot commodity that you would like to see AROD's financial statements.

The broker sends you the statements, which are from last year and unaudited. AROD's owner, Roderick Andrews, prepared the statements. You review the statements, and they are quite impressive. AROD reported a profit of $3,500,000 and showed a low debt-equity ratio. The statement provides no comparative amounts for prior years, and there are no note disclosures provided about AROD's accounting methods related to inventory, depreciation, liabilities, and so on.

INSTRUCTIONS

With a focus on relevance and faithful representation, determine if this would be a wise investment decision based on the financial statements provided by the broker.

SOLUTION

The AROD statements are neither relevant nor a faithful representation.

- With respect to **relevance**, this information must by **timely**. Because AROD's financial statement are a year old, they have lost their ability to influence an investor's decision; a lot could have changed in that one year. Another element of relevance is **predictive value.** AROD's accounting information is not relevant because it provides no reference to other years' profitability. Because developing trends are not reported, the information cannot help an investor predict future profitability. Closely related to predictive value is **feedback value.** These financial statements do not provide feedback on any strategies that the company may have used to increase profits.
- With respect to **faithful representation**, information must be **verifiable** by several independent parties. Because no independent auditor has verified these amounts, there is no way of knowing whether they are represented faithfully. For instance, an investor might like to believe that AROD earned $3,500,000 and that it had a very favorable debt-equity ratio. However, unaudited financial statements do not give reasonable assurance about these claims. The fact that the company owner himself prepared these statements indicates a lack of **neutrality.** Because the company owner is not a disinterested third party, an investor cannot be sure that the owner did not prepare the financial statements to portray the business in the most favorable light.

1.3 Assumptions and Principles

LEARNING OBJECTIVE 3

Discuss the basic assumptions and principles of accounting

The next part of the framework consists of concepts that implement the objective of financial reporting. The **assumptions** and **principles** help to explain how companies should recognize, measure, and report financial elements and events. In addition, you should also recognize the concept of a **cost constraint**, which we will discuss later in the chapter. These concepts serve as guidelines in responding to controversial accounting issues.

Assumptions

We generally rely on four assumptions in accounting: (1) economic entity, (2) going concern, (3) monetary unit, and (4) periodicity.

Economic Entity Assumption

The **economic entity assumption** **means that economic activity can be identified with a particular unit of accountability**. In other words, a company keeps its activity separate and distinct from its owners and any other business unit.[15] Consider these examples:

- The economic entity assumption dictates that **Panera Bread Company** record the company's financial activities separate from those of its owners and managers.
- Financial statement users need to be able to distinguish the activities and elements of different companies, such as **General Motors**, **Ford**, and **Fiat Chrysler**.

If users could not distinguish the activities of different companies, how would they know which company financially outperformed the other?

The entity concept does not apply solely to the segregation of activities among competing companies, such as **Home Depot** and **Lowe's**. An individual, department, division, or an entire industry could be considered a separate entity if we choose to define it in this manner. Thus, **the entity concept does not necessarily refer to a legal entity**. A parent and its subsidiaries are separate **legal** entities, but merging their activities for accounting and reporting purposes does not violate the **economic entity** assumption.[16]

Going Concern Assumption

Most accounting methods rely on the **going concern assumption**—that the company will have a long life. This means for accounting purposes, we assume that a company will continue operating as normal, and we follow normal GAAP procedures. The going concern assumption has three significant implications:

1. The historical cost principle is of limited usefulness if we assume eventual liquidation. Under a liquidation approach, a company like **Peleton Interactive** would better state assets at net realizable value (sales price less costs of disposal).
2. Depreciation and amortization approaches for Peleton would not be needed given a liquidation approach.
3. Current and noncurrent classification of assets and liabilities for Peleton would lose their significance and would be difficult to justify. Also, reporting liabilities based on priority in liquidation would be more reasonable.

Most companies have a high continuance rate and fulfill their objectives and commitments. Recently, however, companies (both large and small) have had to declare bankruptcy due to the Covid-19 pandemic. In these cases, when it is known that a company is going out of business or liquidating, we apply a different type of accounting method, called **liquidation**

[15]The FASB has proposed to link the definition of an entity to its financial reporting objective. That is, a reporting entity is described as a circumscribed area of business activity of interest to present and potential equity investors, lenders, and other capital providers. See IASB/FASB, "The Reporting Entity," *Exposure Draft ED/2010/2: Conceptual Framework for Financial Reporting* (March 2010).

[16]The concept of the entity is changing. For example, defining the "outer edges" of companies is now harder. Public companies often consist of multiple public subsidiaries, each with joint ventures, licensing arrangements, and other affiliations. Increasingly, companies form and dissolve joint ventures or customer-supplier relationships in a matter of months or weeks. These "virtual companies" raise issues about how to account for the entity. As discussed in footnote 15, the FASB is addressing these issues in the entity phase of its conceptual framework project.

accounting. Because we do not cover liquidation accounting in this text, we will assume companies will remain a going concern in our examples.[17]

Monetary Unit Assumption

The **monetary unit assumption** means that money is the common denominator of economic activity and provides an appropriate basis for accounting measurement and analysis. That is, the monetary unit is the most effective means of expressing to interested parties changes in capital and exchanges of goods and services. **The monetary unit is relevant, simple, universally available, understandable, and useful.**

In the United States, accounting ignores price-level changes (inflation and deflation) and assumes that the unit of measure—the dollar—remains reasonably stable. We therefore use the monetary unit assumption to justify adding 1995 dollars to 2025 dollars without any adjustment. The FASB indicated that it expects the dollar, unadjusted for inflation or deflation, to continue to be used to measure items recognized in financial statements.

Periodicity Assumption

Underlying Concepts

This phenomenon provides an interesting example of the trade-off between timeliness and accuracy (free from error) in preparing financial data.

Users need to know a company's performance and economic status on a timely basis so that they can evaluate and compare firms, and take appropriate actions. Therefore, companies must report information periodically. The **periodicity** (or **time period**) **assumption** implies that a company can divide its economic activities into artificial time periods. These time periods vary, but the most common are monthly, quarterly, and yearly.

The shorter the time period, the more difficult it is to determine the proper net income for the period. A month's results usually prove less verifiable than a quarter's results, and a quarter's results are likely to be less verifiable than a year's results. Investors desire and demand that a company quickly process and disseminate information. Yet the quicker a company releases the information, the more likely the information will include errors (see **Underlying Concepts**).

Principles of Accounting

We generally use four basic principles of accounting to record and report transactions: (1) measurement, (2) revenue recognition, (3) expense recognition, and (4) full disclosure.

Measurement Principle

We presently have a "mixed-attribute" system that permits the use of various measurement bases. The most commonly used measurements are based on historical cost and fair value.

Historical Cost GAAP requires that companies account for and report many assets and liabilities on the basis of acquisition price. This is often referred to as the **historical cost principle**. Historical cost has an important advantage over other valuations: **It is generally thought to be verifiable.**

Suppose a company buys a piece of land in the year 2010 paying $100,000 cash.

- The transaction is **verifiable** because there are documents, such as a title deed, confirming the purchase and the payment.

[17] In response to the minimal guidance addressing the going concern assumption, including when it is appropriate to apply or how to apply the liquidation basis of accounting, the FASB has issued two accounting standards. The first, ("Presentation of Financial Statements—Going Concern: Disclosureof Uncertainties about an Entity's Ability to Continue as a Going Concern") [1] requires additional disclosure when substantial doubt about a company's ability to continue as a going concern occurs. (See the FASB Codification References near the end of the chapter.) The second standard ("Presentation of Financial Statements—The Liquidation Basis of Accounting") [2] requires that companies use the liquidation basis of accounting when liquidation is imminent (when either a plan for liquidation has been approved or a plan for liquidation is being imposed by other forces, such as involuntary bankruptcy). If liquidation accounting is used, financial statements should reflect relevant information about a company's resources and obligations in liquidation by measuring and presenting assets and liabilities at the amount of cash or other consideration that the company expects to collect or pay in liquidation, along with additional disclosures about the plan for liquidation, the methods and significant assumptions used to measure assets and liabilities, the type and amount of costs and income accrued, and the expected duration of liquidation.

- The land would be recorded in the company's accounting records at the historical cost of $100,000.
- Now fast forward to the year 2025—is the land still worth $100,000?

Most likely, the land has increased in value. That raises two important questions:

1. Should the company adjust the recorded amount for the land to its current sales value?
2. If so, how would the company determine the current sales value of the land?

One way to determine current sales value is to have the land appraised, but this is merely an estimate of the land's value and is subjective. The only way to truly know the value of the land is to sell it. You can see that if companies were required to adjust assets to current sales value, it could lead to highly subjective valuations that would have low verifiability. Plus, it would be a burden for companies to go through this process every time they want to prepare financial statements.

What about liabilities? Do companies account for them on a cost basis? Yes, they do. Companies issue liabilities, such as bonds, notes, and accounts payable, in exchange for assets (or services), for an agreed-upon price. **This price, established by the exchange transaction, is the "cost" of the liability.** A company uses this amount to record the liability and report it in financial statements. Thus, many users prefer historical cost because it provides them with a **verifiable benchmark** for measuring historical trends.

Fair Value

Fair value is defined as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." Fair value is therefore a market-based measure and commonly referred to as the **fair value principle**. **[3]**

Fair value information may be more useful than historical cost for certain types of assets and liabilities and in certain industries. Therefore, GAAP does allow the use of fair value in certain situations.

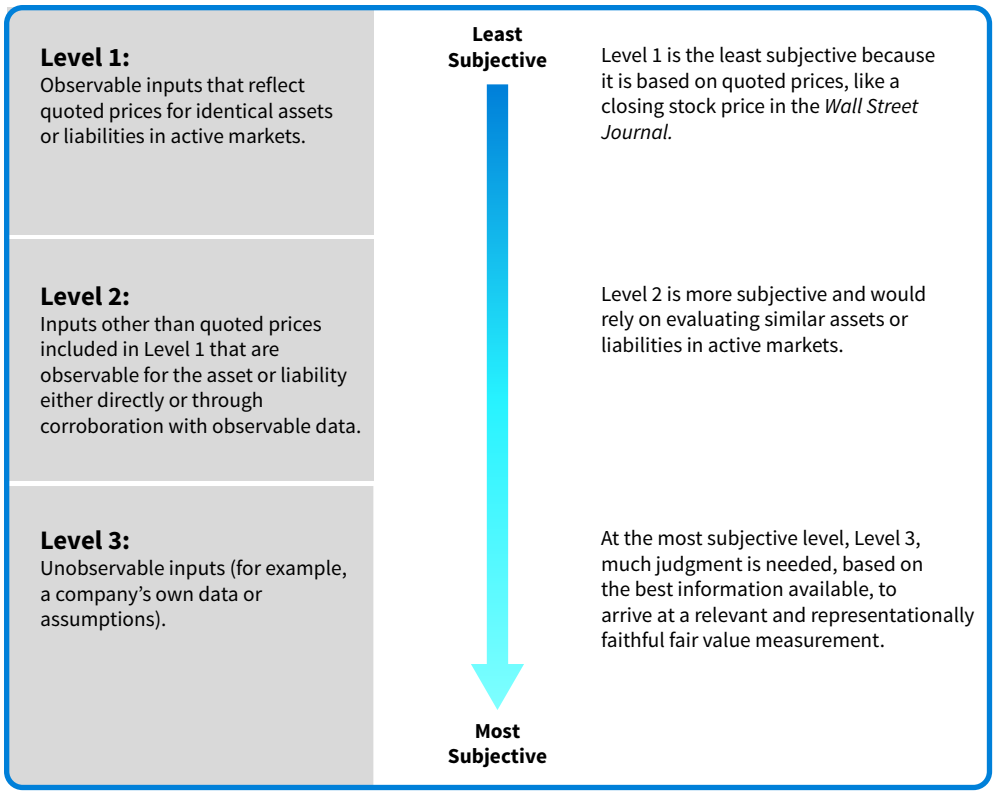
- If long-lived assets such as buildings or equipment decline in value, a fair value measure determines any impairment loss.
- If inventories decline in value, a fair value measure is used to determine the amount of the loss.
- If equity investments and certain types of debt investments either increase or decrease in value, a fair value measure is used to determine the gain or loss.
- If a company chooses, it can use a fair value option to measure its financial assets and financial liabilities, including items such as receivables and debt securities.

In these situations, fair value measurements are considered more relevant than historical cost. And, it is argued that fair value measurement provides better insight into the value of a company's assets and liabilities (its financial position), and a better basis for assessing future cash flow prospects. As you progress through this text, you will learn more about these situations in which fair value is used instead of historical cost.

At initial acquisition, historical cost equals fair value. In subsequent periods, as market and economic conditions change, historical cost and fair value often diverge. Measurement based on fair value introduces subjectivity into accounting reports when fair value information is not readily available. To increase consistency and comparability in fair value measures, a fair value hierarchy is used to determine fair value. As shown in **Illustration 1.7**, the fair value hierarchy is divided into three levels.[18]

[18]For major groups of assets and liabilities, companies must disclose (1) the fair value measurement and (2) the fair value hierarchy level of the measurements as a whole, classified by Level 1, 2, or 3. Given the judgment involved, it follows that the more a company depends on Level 3 to determine fair values, the more information about the valuation process the company will need to disclose. Thus, additional disclosures are required for Level 3 measurements; we discuss these disclosures in more detail in subsequent chapters.

ILLUSTRATION 1.7 Fair Value Hierarchy


Level 1:
Observable inputs that reflect quoted prices for identical assets or liabilities in active markets.
Level 2:
Inputs other than quoted prices included in Level 1 that are observable for the asset or liability either directly or through corroboration with observable data.
Level 3:
Unobservable inputs (for example, a company's own data or assumptions).
Least Subjective
Most Subjective
Level 1 is the least subjective because it is based on quoted prices, like a closing stock price in the Wall Street Journal.
Level 2 is more subjective and would rely on evaluating similar assets or liabilities in active markets.
At the most subjective level, Level 3, much judgment is needed, based on the best information available, to arrive at a relevant and representationally faithful fair value measurement.

It is easy to arrive at fair values when markets are liquid with many traders, but fair value answers are not readily available in other situations. For example, **Walt Disney** recently purchased **21st Century Fox** for $71.3 billion (that is, the mouse swallowed part of the fox).

- In this business combination, Walt Disney must allocate its purchase price to the fair value of the assets and liabilities acquired. For example, the plant and equipment of 21st Century Fox would be recorded on Disney's books based on selling price, if selling prices are available.
- Otherwise, where a limited market exists, such as acquisition of a network of cell towers, an income approach using a present value of future cash flows approach might be used.
- Another possibility would be to use the cost to replace these cell towers (a replacement cost approach).

In summary, we presently have a "mixed-attribute" system that permits the use of historical cost and fair value. Although the historical cost principle continues to be an important basis for valuation, recording and reporting of fair value is increasing.

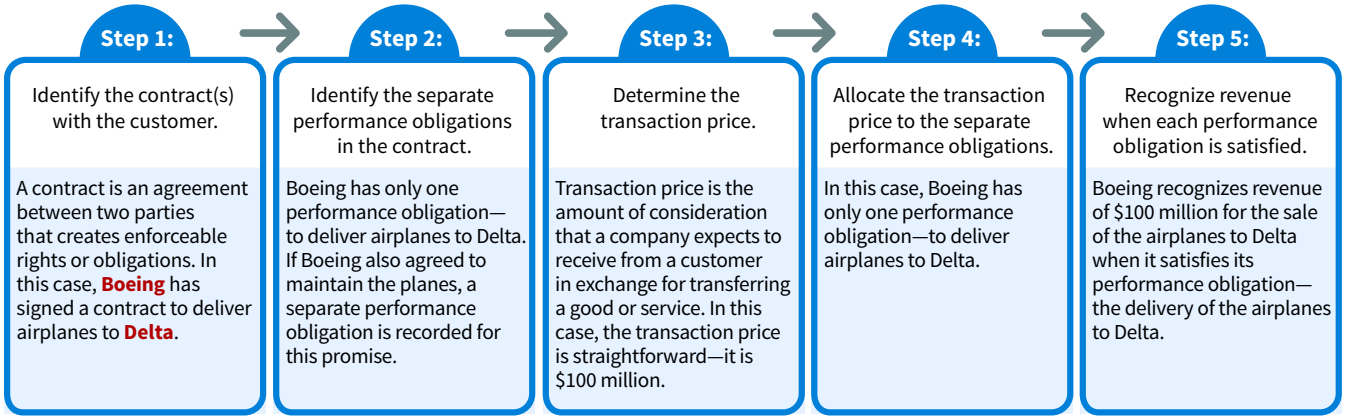
Revenue Recognition Principle

For an item to be recognized in the financial statements, it must meet the definition of an element, be measurable with sufficient certainty, and be relevant and reliable. Two key recognition concepts are the revenue recognition principle and the expense recognition principle. When a company agrees to perform a service or sell a product to a customer, it has a **performance obligation**. The **revenue recognition principle** requires that companies recognize revenue in the accounting period in which the performance obligation is satisfied.[4]

For example, assume that **Klinke Cleaners** cleans clothing on June 30, but customers do not claim and pay for their clothes until the first week of July. Klinke should record revenue in June when it performed the service (satisfied the performance obligation) rather than in July when it received the cash. At June 30, Klinke would report a receivable on its balance sheet and revenue in its income statement for the service performed.

To illustrate the revenue recognition principle in more detail, assume that **Boeing Corporation** signs a contract to sell airplanes to **Delta Air Lines** for $100 million. To determine when to recognize revenue, Boeing uses the five steps shown in **Illustration 1.8**.

ILLUSTRATION 1.8 The Five Steps of Revenue Recognition


Step 1:
Identify the contract(s) with the customer.
A contract is an agreement between two parties that creates enforceable rights or obligations. In this case, Boeing has signed a contract to deliver airplanes to Delta.
Step 2:
Identify the separate performance obligations in the contract.
Boeing has only one performance obligation—to deliver airplanes to Delta. If Boeing also agreed to maintain the planes, a separate performance obligation is recorded for this promise.
Step 3:
Determine the transaction price.
Transaction price is the amount of consideration that a company expects to receive from a customer in exchange for transferring a good or service. In this case, the transaction price is straightforward—it is $100 million.
Step 4:
Allocate the transaction price to the separate performance obligations.
In this case, Boeing has only one performance obligation—to deliver airplanes to Delta.
Step 5:
Recognize revenue when each performance obligation is satisfied.
Boeing recognizes revenue of $100 million for the sale of the airplanes to Delta when it satisfies its performance obligation—the delivery of the airplanes to Delta.

Many revenue transactions pose few problems because the transaction is initiated and completed at the same time. However, when to recognize revenue in other situations is often more difficult, as when a performance obligation is satisfied over time or multiple performance obligations are involved. We will revisit the five steps of revenue recognition in more detail in Chapters 3, 6, 7, 12, and 17.

Expense Recognition Principle

Expenses are defined as outflows or other "using up" of assets or incurring of liabilities during a period as a result of delivering or producing goods and/or performing services. It follows then that recognition of expenses is related to net changes in assets and earning revenues. In practice, the approach for recognizing expenses is, "Let the expense follow the revenues." This approach is the **expense recognition principle**.

- Companies recognize expenses not when they pay wages or make a product, but when the work (service) or the product actually contributes to revenue. Thus, companies tie expense recognition to revenue recognition.
- That is, by matching **efforts (expenses) with accomplishment (revenues), the expense recognition principle is implemented** in accordance with the definition of an expense.[19]

Some costs, however, are difficult to associate with revenue. As a result, some other approach must be developed. Often, companies use a **rational and systematic allocation policy** that will approximate the expense recognition principle. This type of expense recognition involves assumptions about the benefits that a company receives as well as the cost associated with those benefits.

For example, **Southwest Airlines** allocates the cost of an airplane over all of the accounting periods during which it uses the airplane because the asset contributes to the generation of revenue throughout its useful life. Companies also charge some costs to the current period as expenses simply because they cannot determine a connection with revenue. Examples of these types of costs are officers' salaries and other administrative expenses.

For a manufacturer like **New Balance** or **Intel**, costs are generally classified into two groups for expense recognition purposes: **product costs** and **period costs**.

- **Product costs**, such as material, labor, and overhead, attach to the product. Companies carry these costs into future periods if they recognize the revenue from the product in subsequent periods.
- **Period costs**, such as officers' salaries and other administrative expenses, attach to the period. Companies expense such costs in the immediate period even though benefits associated with these costs may occur in the future. Why? Because companies cannot determine a direct relationship between period costs and revenue.

[19]This approach is commonly referred to as the matching principle. However, there is much debate about the conceptual validity of the matching principle. A major concern is that matching permits companies to defer certain costs and treat them as assets on the balance sheet. In fact, these costs may not have future benefits. If abused, this principle permits the balance sheet to become a "dumping ground" for unmatched costs.

Illustration 1.9 summarizes these expense recognition procedures.

ILLUSTRATION 1.9 Expense Recognition

Type of Cost	Relationship	Recognition
Product costs:		
• Material • Labor • Overhead	Direct relationship between cost and revenue.	Recognize in period of revenue.
Period costs:		
• Salaries • Administrative costs	No direct relationship between cost and revenue.	Expense as incurred.

Full Disclosure Principle

Consider the following questions:

- Should a company have to disclose that its CEO has the coronavirus?
- Should a company be required to disclose its level of political spending?
- Should a company be required to disclose its level of diversity in its board of directors?

Answers to questions like these are difficult as they do not directly affect a specific asset, liability, revenue, or expense. But non-disclosure may have a significant effect on the financial reports from a longer-term point of view.

In deciding what information to report, companies follow the general practice of providing information that is of sufficient importance to influence the judgment and decisions of an informed user. The **full disclosure principle** recognizes that the nature and amount of information included in financial reports reflects a series of judgmental trade-offs. These trade-offs strive to balance two objectives:

1. Sufficient details to disclose matters that make a difference to users.
2. Sufficient condensation to make the information understandable, keeping in mind costs of preparing and using it.

Disclosure is not a substitute for proper accounting. As a former chief accountant of the SEC noted, "Good disclosure does not cure bad accounting any more than an adjective or adverb can be used without, or in place of, a noun or verb."

Users find information about financial position, income, cash flows, and investments in one of three places:

1. Within the main body of financial statements.
2. In the notes to those statements.
3. As supplementary information.

Financial Statements As we discussed earlier, the financial statements are the balance sheet, income statement, statement of cash flows, and statement of stockholders' equity. They are a structured means of communicating financial information. To be recognized in the main body of financial statements, **an item should meet the definition of an element, be measurable with sufficient certainty, and be relevant and reliable**.[20]

Notes to the Financial Statements **Notes to financial statements** generally amplify or explain the items presented in the main body of the statements. If the main body of the financial statements gives an incomplete picture of the performance and position of the company, the notes should provide the additional information needed.

- Information in the notes does not have to be quantifiable, nor does it need to qualify as an element.
- Notes can be partially or totally narrative.

[20] *SFAC No. 5,* par. 63.

Examples of notes include descriptions of the accounting policies and methods used in measuring the elements reported in the statements, explanations of uncertainties and contingencies, and statistics and details too voluminous for inclusion in the statements. The notes are essential to understanding the company's performance and position.

Supplementary Information **Supplementary information** may include details or amounts that present a different perspective from that adopted in the financial statements. It may be quantifiable information that is high in relevance but low in faithful representation. For example, oil and gas companies typically provide information on proven reserves as well as the related discounted cash flows.

Supplementary information may also include management's explanation of the financial information and its discussion of the significance of that information. For example, many business combinations have produced financing arrangements that demand new accounting and reporting practices and principles. In each of these situations, the same problem must be faced: making sure the company presents enough information to ensure that the **reasonably prudent investor** will not be misled.[21]

Cost Constraint

In providing information that is decision-useful, companies must weigh the costs of providing the information against the benefits that can be derived from using it. This is referred to as the **cost constraint**, or the **cost-benefit relationship**. Rule-making bodies use cost-benefit analysis before making final their informational requirements. To justify requiring a particular measurement or disclosure, the benefits perceived to be derived from it must exceed the costs perceived to be associated with it.

A corporate executive made the following remark to the FASB about a proposed rule: "In all my years in the financial arena, I have never seen such an absolutely ridiculous proposal . . . To dignify these 'actuarial' estimates by recording them as assets and liabilities would be virtually unthinkable except for the fact that the FASB has done equally stupid things in the past. . . . For God's sake, use common sense just this once."[22] Although extreme, this remark indicates the frustration expressed by members of the business community about rule-making and whether the benefits of a given pronouncement exceed the costs.

The difficulty in cost-benefit analysis is that the costs and especially the benefits are not always evident or measurable. There are several types of costs associated with providing information:

- Collecting, processing, and disseminating information.
- Auditing information.
- Potential litigation caused by disclosure.
- Disclosure to competitors.
- Analyzing and interpreting information.

However, benefits to preparers of the information may include greater management control and access to capital at a lower cost. Users may receive better information for allocation of resources and tax assessment. Benefits are generally more difficult to quantify than are costs.

Despite the difficulty in assessing the costs and benefits of its rules, the FASB attempts to determine that each proposed pronouncement will fill a significant need and that the costs imposed to meet the rule are justified in relation to overall benefits of the resulting information. In addition, the Board seeks input on costs and benefits as part of its due process.[23]

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[21]As discussed (see footnote 9), the FASB has amended Chapter 8 of *SFAC No. 8* (issued in August 2018). The new chapter will be used by the Board as part of the process for establishing disclosure requirements in accounting standards as well as for evaluating existing disclosure requirements, if and when the Board considers those requirements. The FASB also has a standards-level project in which the staff is testing the concepts in Chapter 8, including an assessment of whether they will improve the effectiveness of disclosure requirements in the following topics: "Compensation—Retirement Benefits," "Income Taxes," and "Inventory." (For more information, go to the FASB website; click on Projects, then Technical Agenda, and then the Presentation and Disclosure Framework tab.)

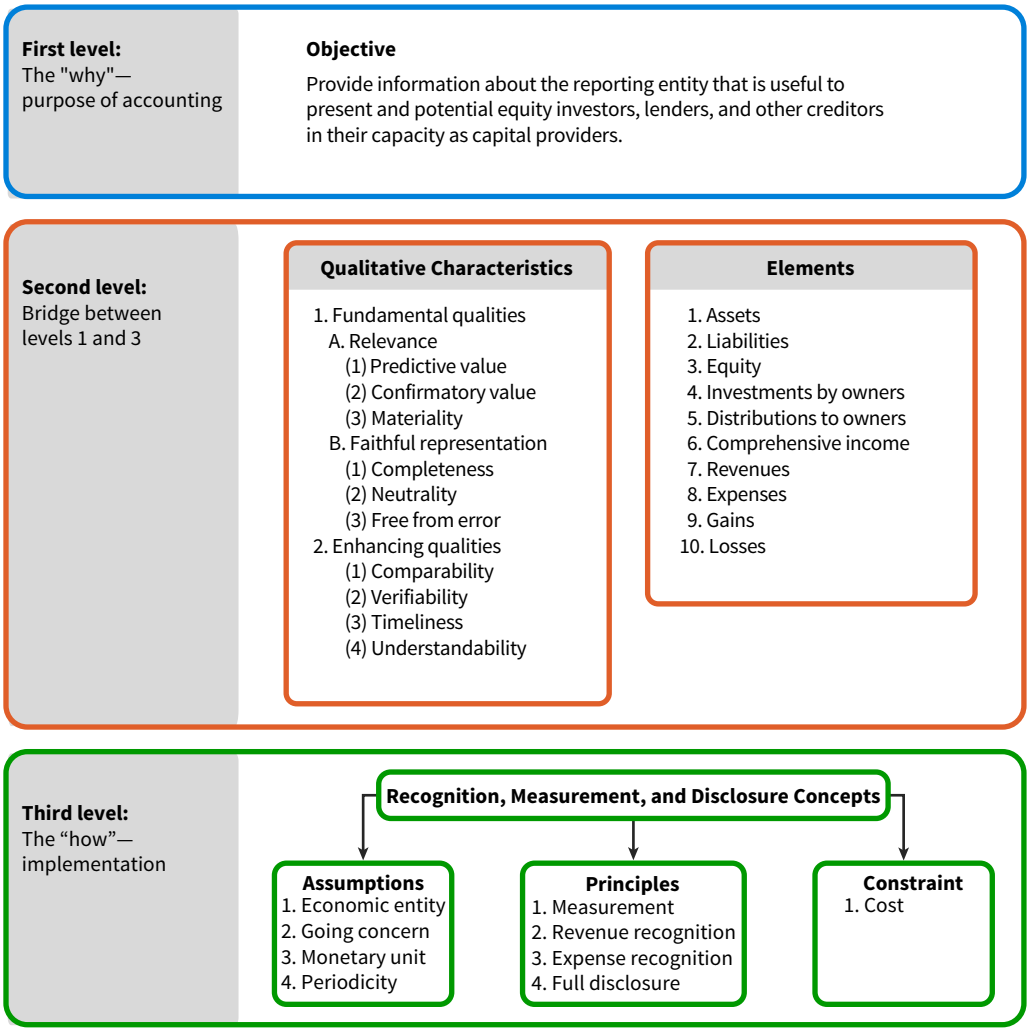
[22]"Decision-Usefulness: The Overriding Objective," *FASB Viewpoints* (October 19, 1983), p. 4.

[23]For example, as part of its project on "Share-Based Payment" **[5]**, the Board conducted a field study and surveyed commercial software providers to collect information on the costs of measuring the fair values of share-based compensation arrangements.

Summary of the Structure

Illustration 1.10 presents the conceptual framework discussed in this chapter. It is similar to Illustration 1.5, except that it provides additional information for each level. We cannot overemphasize the usefulness of this conceptual framework in helping to understand many of the problem areas that we examine in later chapters.

ILLUSTRATION 1.10 Conceptual Framework for Financial Reporting



Accounting Matters — Be Responsible

Kelloggs's issues an annual corporate responsibility report, and **Patagonia** devotes substantial space on its website to articulate its views on social responsibility, its initiatives, and its progress toward its goals. Evidence shows financial performance corresponds to how well companies contend with **environmental, social and governance (ESG) issues**, and investors have taken note.

Unlike financial information, however, sustainability disclosures do not need to conform to a set of shared standards. Kellogg's and Patagonia may focus their reporting on vastly different metrics. With over a dozen major reporting frameworks and standards, businesses can apply the standards they see fit, making it challenging for investors to compare among companies.

Establishing some uniformity in ESG reporting took a big step forward in 2020 when the Big Four public accounting firms developed an international set of metrics for companies to use. They aim to provide a common set of existing disclosures that lead toward a more coherent, comprehensive global corporate reporting system. This emphasizes the need and desire for a uniform set of standards, both for financial and nonfinancial reporting.

Put It into Practice LO 1.3
Identify Assumptions and Principles

FACTS Here are assumptions and principles used by the FASB in developing financial reporting standards

a. Economic entity assumption
b. Going concern assumption
c. Monetary unit assumption
d. Periodicity assumption
e. Historical cost principle
f. Revenue recognition principle
g. Expense recognition principle
h. Full disclosure principle

INSTRUCTIONS

Match each item above with the description below.

1. The belief that the company will continue for the foreseeable future.
2. The reporting of all information that would make a difference to financial statement users.
3. The practice of preparing financial statements at regular intervals.
4. The belief that items should be reported on the balance sheet at the price that was paid to acquire the item.
5. Tracing accounting events to companies.
6. Reporting only those things that can be measured in dollars.
7. Recognize wages when the work contributes to revenue.
8. Recognize sale of goods when performance obligation is satisfied.

SOLUTION

1. b. Going concern assumption
2. h. Full disclosure principle
3. d. Periodicity assumption
4. e. Historical cost principle
5. a. Economic entity assumption
6. c. Monetary unit assumption
7. g. Expense recognition principle
8. f. Revenue recognition principle

1.4 Major Challenges in Financial Reporting

LEARNING OBJECTIVE 4

Identify the major challenges in the financial reporting environment.

Since the implementation of GAAP may affect many interests, much discussion occurs about who should develop GAAP and to whom it should apply. We discuss some of the major issues below.

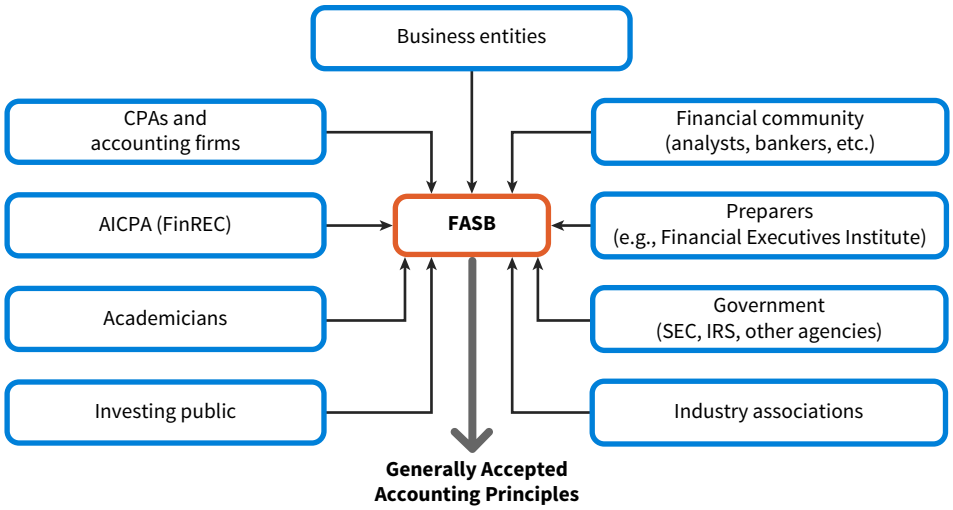
GAAP in a Political Environment

User groups are possibly the most powerful force influencing the development of GAAP. User groups consist of those most interested in or affected by accounting rules. Like lobbyists in our state and national capitals, user groups play a significant role. **GAAP is as much a product of political action as it is of careful logic or empirical findings.**

- User groups may want particular economic events accounted for or reported in a particular way, and they know that the most effective way to influence GAAP is to participate in the formulation of these rules or try to influence the formulator of them.
- These user groups often target the FASB, to pressure it to influence changes in the existing rules and the development of new ones.

Illustration 1.11 shows the various user groups that apply pressure.

ILLUSTRATION 1.11 User Groups that Influence the Formulation of Accounting Standards



Should there be politics in establishing GAAP for financial accounting and reporting? Why not? We have politics at home; at school; at the fraternity, sorority, and dormitory; at the office; and at church, temple, and mosque. Politics is everywhere. GAAP is part of the real world, and it cannot escape politics and political pressures.[24]

That is not to say that politics in establishing GAAP is a negative force. Considering the **economic consequences**[25] of many accounting rules, special interest groups should vocalize their reactions to proposed rules. What the Board should *not* do is issue pronouncements that are primarily politically motivated. While paying attention to its constituencies, the Board should base GAAP on sound research and a conceptual framework that has its foundation in economic reality.

The Expectations Gap

The **Sarbanes-Oxley Act** was passed in response to a string of accounting scandals at companies like **Enron**, **Cendant**, **Sunbeam**, **Rite-Aid**, **Xerox**, and **WorldCom**. This law increased the resources for the SEC to combat fraud and curb poor reporting practices.[26] In addition, the Sarbanes-Oxley Act introduced sweeping changes to the institutional structure of the accounting profession. The following are some of the key provisions of the legislation.

[24]FASB board members acknowledged that they undertook many of the Board's projects, such as "Accounting for Contingencies," "Accounting for Pensions," "Statement of Cash Flows," and "Recognition and Measurement of Financial Assets and Liabilities," due to political pressure.

[25]**Economic consequences** means the impact of accounting reports on the wealth positions of issuers and users of financial information, and the decision-making behavior resulting from that impact. The resulting behavior of these individuals and groups could have detrimental financial effects on the providers of the financial information. See Stephen A. Zeff, "The Rise of 'Economic Consequences'," *Journal of Accountancy* (December 1978), pp. 56–63. We extend appreciation to Professor Zeff for his insights on this chapter.

[26]*Sarbanes-Oxley Act of 2002,* H. R. Rep. No. 107-610 (2002).

- Establishes an oversight board, the **Public Company Accounting Oversight Board (PCAOB)**, for accounting practices. The PCAOB has oversight and enforcement authority and establishes auditing, quality control, and independence standards and rules.
- Requires CEOs and CFOs to personally certify that financial statements and disclosures are accurate and complete, and requires CEOs and CFOs to forfeit bonuses and profits when there is an accounting restatement.
- Requires audit committees to be comprised of independent members and members with financial expertise and requires codes of ethics for senior financial officers.
- Requires large public companies to document and evaluate the effectiveness of their internal controls over financial reporting.

Are these changes enough to address deficiencies in financial reporting? The **expectations gap**, which is what the public thinks accountants **should** do versus what accountants think they **can** do, is difficult to close. Although the profession can argue rightfully that accounting cannot be responsible for every financial catastrophe, it must continue to strive to meet the needs of society. However, efforts to meet these needs will become more costly to society. The development of a highly transparent, clear, and reliable system will require considerable resources.

Financial Reporting Issues

While our reporting model has worked well in capturing and organizing financial information in a useful and reliable fashion, much still needs to be done, as shown in **Illustration 1.12**.

ILLUSTRATION 1.12 Financial Reporting Challenges

Challenge	Issue to Be Addressed
Nonfinancial measurements	Financial reports fail to provide some key performance measures widely used by management, such as customer satisfaction indexes, backlog information, reject rates on goods purchased, as well as the results of companies' sustainability efforts.
Forward-looking information	Financial reports fail to provide forward-looking information needed by present and potential investors and creditors. One individual noted that financial statements in 2020 should have started with the phrase, "Once upon a time," to signify their use of historical cost and accumulation of past events.
Soft assets	Financial reports are focused on hard assets (inventory, plant assets) but fail to provide much information about a company's soft assets (intangibles). The best assets are often intangible. Consider **Microsoft**'s know-how and market dominance, **Walmart**'s expertise in supply chain management, and **Procter & Gamble**'s brand image.
Timeliness	Companies only prepare financial statements quarterly and provide audited financials annually. Little to no real-time financial statement information is available.
Understandability	Investors and market regulators are raising concerns about the complexity and lack of understandability of financial reports.

We believe each of these challenges must be met for the accounting profession to provide the type of information needed for an efficient capital allocation process. We are confident that changes will occur, based on these positive signs.

- **Companies are voluntarily disclosing information deemed relevant to investors.** Often, such information is nonfinancial. For example, banking companies now disclose data on loan growth, credit quality, fee income, operating efficiency, capital management,

and management strategy. Increasingly, companies are preparing reports on their sustainability efforts by reporting such information as water use and conservation, carbon impacts, and labor practices. In some cases, "integrated reports" are provided, which incorporate sustainability reports into the traditional annual report, leading some to call for standards for sustainability reporting.

- **The FASB is now working on projects that address disclosure effectiveness, a reporting framework for non-public companies, and a simplification initiative.** The projects could go a long way toward addressing complexity and understandability of the information in financial statements, allowing for more-effective, less-complex, and flexible reporting to meet the needs of investors.
- Most companies publish their annual reports in several formats on the Internet. The most innovative companies offer sections of their annual reports in a format that the user can readily manipulate, such as in an electronic spreadsheet format. Companies also format their financial reports using eXtensible Business Reporting Language (XBRL), which permits quicker and lower-cost access to their financial information.

Changes in these directions will enhance the relevance of financial reporting and provide useful information to financial statement readers.

Analytics in Action: Big Data for Big Decisions

Accounting software systems collect vast amounts of data about a company's economic events as well as its suppliers and customers. With financial information delivered in a fully digital format, decision-makers are taking advantage of this wealth of information (big data) by using data analytics.

- **Data analytics** involves analyzing data, often employing both software and statistics, to draw inferences.
- As both data access and analytical software improve, the use of data analytics to support decisions is becoming increasingly common at virtually all types of companies.

Data analytics often employs software and statistics to make inferences and make more informed business decisions.

An end-of-chapter Analytics in Action Activities section, which includes Excel-based problems with data sets, is available for most chapters in this text.

Ethics in the Environment of Financial Accounting

Robert Sack, a noted commentator on the subject of accounting ethics, observed, "Based on my experience, new graduates tend to be idealistic . . . thank goodness for that! Still, it is very dangerous to think that your armor is all in place and say to yourself, 'I would have never given in to that.' The pressures don't explode on us; they build, and we often don't recognize them until they have us."

These observations are particularly appropriate for anyone entering the business world. In accounting, as in other areas of business, we frequently encounter ethical dilemmas. Some of these dilemmas are simple and easy to resolve. However, many are not, requiring difficult choices among allowable alternatives. Consider these examples:

- Companies that concentrate on "maximizing the bottom line," "facing the challenges of competition," and "stressing short-term results" place accountants in an environment of conflict and pressure.
- Basic questions such as, "Is this way of communicating financial information good or bad?" "Is it right or wrong?" and "What should I do in this circumstance?" cannot always be answered by simply adhering to GAAP or following the rules of the profession.
- Technical competence is not enough when encountering ethical decisions.

Doing the right thing is not always easy or obvious. The pressures "to bend the rules," "to play the game," or "to just ignore it" can be considerable. For example, "Will my decision affect my job performance negatively?" "Will my superiors be upset?" and "Will my colleagues be unhappy with me?" are often questions business people face in making a tough ethical decision. The decision is more difficult because there is no comprehensive ethical system to provide guidelines.

Time, job, client, personal, and peer pressures can complicate the process of ethical sensitivity and selection among alternatives. *Throughout this text, we present ethical considerations to help sensitize you to the type of situations you may encounter in the performance of your professional responsibility.* As Warren Buffet noted: "A word of caution as you go through life—It takes 20 years to build a reputation and five minutes to lose it. If you think about that, you will do things differently."

Review and Practice

Key Terms Review

Accounting Standards Updates 1-7
American Institute of Certified Public Accountants (AICPA) 1-8
assumptions 1-18
comparability 1-15
completeness 1-14
conceptual framework 1-11
confirmatory value 1-13
conservatism 1-15(*n*)
consistency 1-16
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fair value principle 1-21
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supplementary information 1-25
timeliness 1-16
understandability 1-16
verifiability 1-16

Learning Objectives Review

1 Describe the financial reporting environment, major standard-setting bodies, and the meaning of generally accepted accounting principles (GAAP).

The **objective of general-purpose financial reporting** is to provide financial information about the reporting entity that is useful to present and potential equity investors, lenders, and other creditors in decisions about providing resources to the entity through equity investments and loans or other forms of credit. Information that is decision-useful to investors may also be helpful to other users of financial reporting who are not investors.

To achieve this objective, the accounting profession has attempted to **develop a set of standards that is generally accepted** and universally practiced. Without this set of standards, each company would have to develop its own standards. Readers of financial statements would have to familiarize themselves with every company's peculiar accounting and reporting practices. As a result, it would be almost impossible to prepare statements that could be compared.

The **Securities and Exchange Commission (SEC)** is a federal agency that has the broad powers to prescribe, in whatever detail it desires, the accounting standards to be employed by companies that fall within its jurisdiction. The **Financial Accounting Standards Board (FASB)** establishes and improves standards of financial accounting and reporting for the guidance and education of the public. **Generally accepted accounting principles (GAAP)** are those principles that have substantial authoritative support. All authoritative accounting documents are classified in one source referred to as the Codification. The purpose of the Codification is to simplify user access to all authoritative GAAP. The Codification is the means by which GAAP is documented, presented, and updated.

2 Describe the components and usefulness of the conceptual framework.

The accounting profession needs a conceptual framework to (1) build on and relate to an established body of concepts and objectives, (2) provide a framework for solving new and emerging practical problems, (3) increase financial statement users' understanding of and confidence in financial reporting, and (4) enhance comparability among companies' financial statements. Concepts that relate to financial reporting for business enterprises provide the basis for the conceptual framework. They include objectives, qualitative characteristics, and elements. In addition, measurement and recognition concepts are developed.

Objective of financial reporting. The objective of general-purpose financial reporting is to provide financial information about the reporting entity that is **useful to present and potential equity investors, lenders, and other creditors** in making decisions about providing resources to the entity. Those decisions involve buying, selling, or holding equity and debt instruments, and providing or settling loans and other forms of credit. Information that is decision-useful to capital providers may also be helpful to other users of financial reporting who are not capital providers.

The overriding criterion by which accounting choices can be judged is decision-usefulness—that is, providing information that is most useful for decision-making. Relevance and faithful representation are the two fundamental qualities that make information decision-useful. Relevant information makes a difference in a decision by having predictive or confirmatory value and is material. Faithful representation is characterized by completeness, neutrality, and being free from error.

Enhancing qualities of useful information are (1) comparability, (2) verifiability, (3) timeliness, and (4) understandability.

Elements of financial statements. The basic elements of financial statements are (1) assets, (2) liabilities, (3) equity, (4) investments by owners, (5) distributions to owners, (6) comprehensive income, (7) revenues, (8) expenses, (9) gains, and (10) losses.

3 Discuss the basic assumptions and principles of accounting.

Four basic assumptions underlying financial accounting are as follows. (1) **Economic entity:** The activity of a company can be kept separate and distinct from its owners and any other business units. (2) **Going concern:** The company will have a long life. (3) **Monetary unit:** Money is the common denominator by which economic activity is conducted, and the monetary unit provides an appropriate basis for measurement and analysis. (4) **Periodicity:** The economic activities of a company can be divided into artificial time periods.

The principles underlying accounting are as follows. (1) **Measurement principle:** GAAP permits the use of historical cost, fair value, and other valuation bases. Although the historical cost principle (measurement based on acquisition price) continues to be an important basis for valuation, recording and reporting of fair value information is increasing. (2) **Revenue recognition principle:** A company recognizes revenue when it satisfies a performance obligation. (3) **Expense recognition principle:** As a general rule, companies recognize expenses when the service or the product actually makes its contribution to revenue (commonly referred to as **matching**). (4) **Full disclosure principle:** Companies generally provide information that is of sufficient importance to influence the judgment and decisions of an informed user. (5) **Cost constraint:** The cost of providing the information must be weighed against the benefits that can be derived from using the information.

4 Identify the major challenges in the financial reporting environment.

One major challenge is that user groups may want particular economic events accounted for or reported in a particular way, and they fight hard to get what they want. They especially target the FASB to influence changes in existing GAAP and in the development of new rules. A second challenge is that financial reports fail to provide (1) some key performance measures widely used by management, (2) forward-looking information needed by investors and creditors, (3) sufficient information on a company's soft assets (intangibles), (4) real-time financial information, and (5) easy-to-comprehend information. Finally, financial accountants are called on for moral discernment and ethical decision-making. Decisions are sometimes difficult because a public consensus has not emerged to formulate a comprehensive ethical system that provides guidelines for making ethical judgments.

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions and a full glossary of all key terms.

Exercises, Problems, Problem Solution Walkthrough Videos, Data Analytics Activities, and many more assessment tools and resources are available for practice in Wiley Course Resources.

Questions

1. How does accounting help the capital allocation process?
2. What is the objective of financial reporting?
3. Briefly explain the meaning of decision-usefulness in the context of financial reporting.
4. Of what value is a common set of standards in financial accounting and reporting?
5. In what way is the Securities and Exchange Commission concerned about and supportive of accounting principles and standards?
6. If you had to explain or define "generally accepted accounting principles or standards," what essential characteristics would you include in your explanation?
7. What is the difference between the Codification and the Codification Research System?
8. What are the primary advantages of having a Codification of generally accepted accounting principles?
9. What is a conceptual framework? Why is a conceptual framework necessary in financial accounting?
10. What is the primary objective of financial reporting?
11. What is meant by the term "qualitative characteristics of accounting information"?
12. Briefly describe the two fundamental qualities of useful accounting information.
13. How is materiality (or immateriality) related to the proper presentation of financial statements? What factors and measures should be considered in assessing the materiality of a misstatement in the presentation of a financial statement?
14. What are the enhancing qualities of the qualitative characteristics? What is the role of enhancing qualities in the conceptual framework?
15. According to the FASB conceptual framework, the objective of financial reporting for business enterprises is based on the needs of the users of financial statements. Explain the level of sophistication that the Board assumes about the users of financial statements.
16. What is the distinction between comparability and consistency?
17. Why is it necessary to develop a definitional framework for the elements of accounting?
18. Expenses, losses, and distributions to owners are all decreases in net assets. What are the distinctions among them?
19. Revenues, gains, and investments by owners are all increases in net assets. What are the distinctions among them?
20. What are the four basic assumptions that underlie the financial accounting structure?
21. The life of a business is divided into specific time periods, usually a year, to measure the results of operations for each such time period and to portray financial conditions at the end of each period.
    a. This practice is based on the accounting assumption that the life of the business consists of a series of time periods and that it is possible to measure accurately the results of operations for each period. Comment on the validity and necessity of this assumption.
    b. What has been the effect of this practice on accounting? What is its relation to the accrual system? What influence has it had on accounting entries and methodology?
22. What is the basic accounting problem created by the monetary unit assumption when there is significant inflation? What appears to be the FASB position on a stable monetary unit?
23. What is the definition of fair value?
24. Briefly describe the fair value hierarchy.
25. Explain the revenue recognition principle.
26. What is a performance obligation, and how is it used to determine when revenue should be recognized?
27. What are the five steps used to determine the proper time to recognize revenue?
28. Selane Eatery operates a catering service specializing in business luncheons for large corporations. Selane requires customers to place their orders 2 weeks in advance of the scheduled events. Selane bills its customers on the tenth day of the month following the date of service and requires that payment be made within 30 days of the billing date. Conceptually, when should Selane recognize revenue related to its catering service?
29. Three expense recognition methods (associating cause and effect, systematic and rational allocation, and immediate recognition) were discussed in the text under the expense recognition principle. Indicate the basic nature of each of these expense recognition methods and give two examples of each.
30. Briefly describe the types of information concerning financial position, income, and cash flows that might be provided (a) within the main body of the financial statements, (b) in the notes to the financial statements, or (c) as supplementary information.
31. In January 2026, Janeway Inc. doubled the amount of its outstanding stock by selling on the market an additional 10,000 shares to finance an expansion of the business. You propose that this information be shown by a footnote on the balance sheet as of December 31, 2025. The president objects, claiming that this sale took place after December 31, 2025, and therefore should not be shown. Explain your position.
32. Describe the major constraint inherent in the presentation of accounting information.

33. What are some of the costs of providing accounting information? What are some of the benefits of accounting information? Describe the cost-benefit factors that should be considered when new accounting standards are being proposed.

34. The treasurer of Landowska Co. has heard that conservatism is a doctrine that is followed in accounting and, therefore, proposes that several policies be followed that are conservative in nature. State your opinion with respect to each of the policies listed.

a. The company gives a 2-year warranty to its customers on all products sold. The estimated warranty costs incurred from this year's sales should be entered as an expense this year instead of an expense in the period in the future when the warranty is made good.

b. When sales are made on account, there is always uncertainty about whether the accounts are collectible. Therefore, the treasurer recommends recording the sale when the cash is received from the customers.

c. A personal liability lawsuit is pending against the company. The treasurer believes there is an even chance that the company will lose the suit and have to pay damages of $200,000 to $300,000. The treasurer recommends that a loss be recorded and a liability created in the amount of $300,000.

35. What are the sources of pressure that change and influence the development of GAAP?

36. Some individuals have indicated that the FASB must be cognizant of the economic consequences of its pronouncements. What is meant by "economic consequences"? What dangers exist if politics play too much of a role in the development of GAAP?

37. One writer recently noted that 99.4% of all companies prepare statements that are in accordance with GAAP. Why then is there such concern about fraudulent financial reporting?

38. What is the "expectations gap"? What is the profession doing to try to close this gap?

39. What are some of the major challenges facing the accounting profession?

40. How are financial accountants challenged in their work to make ethical decisions? Is technical mastery of GAAP not sufficient to the practice of financial accounting?

Brief Exercises

BE1.1 (LO 1) Presented below are four statements, which you are to identify as true or false. If false, explain why the statement is false.

1. GAAP is the term used to indicate the whole body of FASB authoritative literature.
2. Any company claiming compliance with GAAP must comply with most standards and interpretations but does not have to follow the disclosure requirements.
3. The primary governmental body that has influence over the FASB is the SEC.
4. The FASB has a government mandate and therefore does not have to follow due process in issuing a standard.

BE1.2 (LO 1) Wayne Rogers, an administrator at a major university, recently said, "I've got some CDs in my IRA, which I set up to beat the IRS." As elsewhere, in the world of accounting and finance, it often helps to be fluent in abbreviations and acronyms. Presented below is a list of common accounting acronyms. Identify the term for which each acronym stands, and provide a brief definition of each term.

a. AICPA.
b. FAF.
c. FASAC.
d. GAAP.
e. CPA.
f. FASB.
g. SEC.
h. IASB.

BE1.3 (LO 2) Match the qualitative characteristics below with the following statements.

1. Relevance.
2. Faithful representation.
3. Predictive value.
4. Confirmatory value.
5. Comparability.
6. Completeness.
7. Neutrality.
8. Timeliness.

a. Quality of information that permits users to identify similarities in and differences between two sets of economic phenomena.

b. Having information available to users before it loses its capacity to influence decisions.

c. Information about an economic phenomenon that has value as an input to the processes used by capital providers to form their own expectations about the future.

d. Information that is capable of making a difference in the decisions of users in their capacity as capital providers.

e. Absence of bias intended to attain a predetermined result or to induce a particular behavior.

BE1.4 (LO 2) Match the qualitative characteristics below with the following statements.

1. Timeliness.
2. Completeness.
3. Free from error.
4. Understandability.
5. Faithful representation.
6. Relevance.
7. Neutrality.
8. Confirmatory value.

a. Quality of information that assures users that information represents the economic phenomena that it purports to represent.

b. Information about an economic phenomenon that corrects past or present expectations based on previous evaluations.

c. The extent to which information is accurate in representing the economic substance of a transaction.

d. Includes all the information that is necessary for a faithful representation of the economic phenomena that it purports to represent.

e. Quality of information that allows users to comprehend its meaning.

BE1.5 (LO 2) Discuss whether the changes described in each of the cases below require recognition in the CPA's audit report as to consistency. (Assume that the amounts are material.)

a. The company changed its inventory method to FIFO from weighted-average, which had been used in prior years.

b. The company disposed of one of the two subsidiaries that had been included in its consolidated statements for prior years.

c. The estimated remaining useful life of plant property was reduced because of obsolescence.

BE1.6 (LO 2) Identify which qualitative characteristic of accounting information is best described in each item below. (Do not use relevance and faithful representation.)

a. The annual reports of **Best Buy Co.** are audited by certified public accountants.

b. **Black & Decker** and **Cannondale Corporation** both use the FIFO cost flow assumption.

c. **Starbucks Corporation** has used straight-line depreciation since it began operations.

d. **Motorola** issues its quarterly reports immediately after each quarter ends.

BE1.7 (LO 2) Presented below are three different transactions related to materiality. Explain whether you would classify these transactions as material.

a. Blair Co. has reported a positive trend in earnings over the last 3 years. In the current year, it reduces its bad debt allowance to ensure another positive earnings year. The impact of this adjustment is equal to 3% of net income.

b. Hindi Co. has an unusual gain of $3.1 million on the sale of plant assets and a $3.3 million loss on the sale of investments. It decides to net the gain and loss because the net effect is considered immaterial. Hindi Co.'s income for the current year was $10 million.

c. Damon Co. expenses all capital equipment under $2,500 on the basis that it is immaterial. The company has followed this practice for a number of years.

BE1.8 (LO 2) For each item below, indicate to which category of elements of financial statements it belongs.

a. Retained earnings.
b. Sales revenue.
c. Additional paid-in capital.
d. Inventory.
e. Depreciation.
f. Loss on sale of equipment.
g. Interest payable.
h. Dividends.
i. Gain on sale of investment.
j. Issuance of common stock.

BE1.9 (LO 2) Indicate the accounting for each of the following expenditures as an asset or an expense. Justify your choices. Assume all items are material.

a. Legal fees paid in connection with the purchase of land are $1,500.

b. Eduardo, Inc. paves the driveway leading to the office building at a cost of $21,000.

c. A meat market purchases a meat-grinding machine at a cost of $3,500.

d. On June 30, Monroe and Meno, medical doctors, pay 6 months' office rent to cover the month of July and the next 5 months.

e. Smith's Hardware Company pays $9,000 in wages to laborers for construction on a building to be used in the business.

f. Alvarez's Florists pays wages of $2,100 for the month to an employee who serves as driver of their delivery truck.

BE1.10 (LO 3) Identify which basic assumption of accounting is best described in each item below.

a. The economic activities of **FedEx Corporation** are divided into 12-month periods for the purpose of issuing annual reports.

b. **Solectron Corporation, Inc.** does not adjust amounts in its financial statements for the effects of inflation.

c. **Walgreen Co.** reports current and noncurrent classifications in its balance sheet.

d. The economic activities of **General Electric** and its subsidiaries are merged for accounting and reporting purposes.

BE1.11 (LO 3) If the going concern assumption is not made in accounting, discuss the differences in the amounts shown in the financial statements for the following items.

a. Land.

b. Unamortized bond premium.

c. Depreciation expense on equipment.

d. Inventory.

e. Prepaid insurance.

BE1.12 (LO 3) Identify which basic principle of accounting is best described in each item below.

a. **Norfolk Southern Corporation** reports revenue in its income statement when the performance obligation is satisfied instead of when the cash is collected.

b. **Yahoo!** recognizes depreciation expense for a machine over the 2-year period during which that machine helps the company earn revenue.

c. **Oracle Corporation** reports information about pending lawsuits in the notes to its financial statements.

d. **Gap, Inc.** reports land on its balance sheet at the amount paid to acquire it, even though the estimated fair value is greater.

BE1.13 (LO 3) Vande Velde Company made three investments during 2025. (1) It purchased 1,000 shares of Sastre Company, a start-up company. Vande Velde made the investment based on valuation estimates from an internally developed model. (2) It purchased 2,000 shares of **GE** stock, which trades on the NYSE. (3) It invested $10,000 in local development authority bonds. Although these bonds do not trade on an active market, their value closely tracks movements in U.S. Treasury bonds. Where will Vande Velde report these investments in the fair value hierarchy?

BE1.14 (LO 3) What accounting assumption, principle, or constraint would **Target Corporation** use in each of the situations below?

a. Target was involved in litigation over the last year. This litigation is disclosed in the financial statements.

b. Target allocates the cost of its depreciable assets over the life it expects to receive revenue from these assets.

c. Target records the purchase of a new **Dell** PC at its cash equivalent price.

Exercises

E1.1 (LO 1) Writing (Need for GAAP) Some argue that having various organizations establish accounting principles is wasteful and inefficient. Rather than mandating accounting rules, each company could voluntarily disclose the type of information it considered important. In addition, if an investor wants additional information, the investor could contact the company and pay to receive the additional information desired.

Instructions

Comment on the appropriateness of this viewpoint.

E1.2 (LO 1, 4) (Financial Reporting and Accounting Standards) Answer the following multiple-choice questions.

1. GAAP stands for:
   a. governmental auditing and accounting practices.
   b. generally accepted attest principles.

c. government audit and attest policies.

d. generally accepted accounting principles.

2. Accounting standard-setters use the following process in establishing accounting standards:

a. Research, exposure draft, discussion paper, standard.

b. Discussion paper, research, exposure draft, standard.

c. Research, preliminary views, discussion paper, standard.

d. Research, discussion paper, exposure draft, standard.

3. GAAP is comprised of:

a. FASB standards, interpretations, and concepts statements.

b. FASB financial standards.

c. FASB standards, interpretations, EITF consensuses, and accounting rules issued by FASB predecessor organizations.

d. any accounting guidance included in the FASB Codification.

4. The authoritative status of the conceptual framework is as follows.

a. It is used when there is no standard or interpretation related to the reporting issues under consideration.

b. It is not as authoritative as a standard but takes precedence over any interpretation related to the reporting issue.

c. It takes precedence over all other authoritative literature.

d. It has no authoritative status.

5. The objective of financial reporting places most emphasis on:

a. reporting to capital providers.

b. reporting on stewardship.

c. providing specific guidance related to specific needs.

d. providing information to individuals who are experts in the field.

6. General-purpose financial statements are prepared primarily for:

a. internal users.

b. external users.

c. auditors.

d. government regulators.

7. Economic consequences of accounting standard-setting means:

a. standard-setters must give first priority to ensuring that companies do not suffer any adverse effect as a result of a new standard.

b. standard-setters must ensure that no new costs are incurred when a new standard is issued.

c. the objective of financial reporting should be politically motivated to ensure acceptance by the general public.

d. accounting standards can have detrimental impacts on the wealth levels of the providers of financial information.

8. The expectations gap is:

a. what financial information management provides and what users want.

b. what the public thinks accountants should do and what accountants think they can do.

c. what the governmental agencies want from standard-setting and what the standard-setters provide.

d. what the users of financial statements want from the government and what is provided.

E1.3 (LO 2) (Usefulness, Objective of Financial Reporting) Indicate whether the following statements about the conceptual framework are true or false. If false, provide a brief explanation supporting your position.

a. Accounting rule-making that relies on a body of concepts will result in useful and consistent pronouncements.

b. General-purpose financial reports are most useful to company insiders in making strategic business decisions.

c. Accounting standards based on personal conceptual frameworks generally will result in consistent and comparable accounting reports.

d. Capital providers are the only users who benefit from general-purpose financial reporting.

e. Accounting reports should be developed so that users without knowledge of economics and business can become informed about the financial results of a company.

f. The objective of financial reporting is the foundation from which the other aspects of the framework logically result.

E1.4 (LO 2) (Usefulness, Objective of Financial Reporting, Qualitative Characteristics) Indicate whether the following statements about the conceptual framework are true or false. If false, provide a brief explanation supporting your position.

a. The fundamental qualitative characteristics that make accounting information useful are relevance and verifiability.

b. Relevant information only has predictive value, confirmatory value, or both.

c. Information that is a faithful representation is characterized as having predictive or confirmatory value.

d. Comparability pertains only to the reporting of information in a similar manner for different companies.

e. Verifiability is solely an enhancing characteristic for faithful representation.

f. In preparing financial reports, it is assumed that users of the reports have reasonable knowledge of business and economic activities.

E1.5 (LO 2) Groupwork (Qualitative Characteristics) *SFAC No. 8*, Chapter 3, identifies the qualitative characteristics that make accounting information useful. Presented below are a number of questions related to these qualitative characteristics and underlying constraint.

a. What is the quality of information that enables users to confirm or correct prior expectations?

b. Identify the pervasive constraint developed in the conceptual framework.

c. The chairman of the SEC at one time noted, "If it becomes accepted or expected that accounting principles are determined or modified in order to secure purposes other than economic measurement, we assume a grave risk that confidence in the credibility of our financial information system will be undermined." Which qualitative characteristic of accounting information should ensure that such a situation will not occur? (Do not use faithful representation.)

d. Muruyama Corp. switches from FIFO to average-cost to FIFO over a 2-year period. Which qualitative characteristic of accounting information is not followed?

e. Assume that the profession permits the savings and loan industry to defer losses on investments it sells because immediate recognition of the loss may have adverse economic consequences on the industry. Which qualitative characteristic of accounting information is not followed? (Do not use relevance or faithful representation.)

f. What are the two fundamental qualities that make accounting information useful for decision-making?

g. Watteau Inc. does not issue its first-quarter report until after the second quarter's results are reported. Which qualitative characteristic of accounting is not followed? (Do not use relevance.)

h. Predictive value is an ingredient of which of the two fundamental qualities that make accounting information useful for decision-making purposes?

i. Duggan, Inc. is the only company in its industry to depreciate its plant assets on a straight-line basis. Which qualitative characteristic of accounting information may not be followed?

j. Roddick Company has attempted to determine the replacement cost of its inventory. Three different appraisers arrive at substantially different amounts for this value. The president, nevertheless, decides to report the middle value for external reporting purposes. Which qualitative characteristic of information is lacking in these data? (Do not use relevance or faithful representation.)

E1.6 (LO 2) (Qualitative Characteristics) The qualitative characteristics that make accounting information useful for decision-making purposes are as follows.

Relevance	Neutrality	Verifiability
Faithful representation	Completeness	Understandability
Predictive value	Timeliness	Comparability
Confirmatory value	Materiality	Free from error

Instructions

Identify the appropriate qualitative characteristic(s) to be used given the following information.

a. Qualitative characteristic being employed when companies in the same industry are using the same accounting principles.

b. Quality of information that confirms users' earlier expectations.

c. Imperative for providing comparisons of a company from period to period.

d. Ignores the economic consequences of a standard or rule.

e. Requires a high degree of consensus among individuals on a given measurement.

f. Predictive value is an ingredient of this fundamental quality of information.

g. Four qualitative characteristics that are related to both relevance and faithful representation.

h. An item is not recorded because its effect on income would not change a decision.

i. Neutrality is an ingredient of this fundamental quality of accounting information.

j. Two fundamental qualities that make accounting information useful for decision-making purposes.

k. Issuance of interim reports is an example of what enhancing quality of relevance?

E1.7 (LO 2) (Elements of Financial Statements) Ten interrelated elements that are most directly related to measuring the performance and financial status of an enterprise are provided below.

Assets	Distributions to owners	Expenses
Liabilities	Comprehensive income	Gains
Equity	Revenues	Losses
Investments by owners		

Instructions

Identify the element or elements associated with the 12 items below.

a. Arises from peripheral or incidental transactions.

b. Obligation to transfer resources arising from a past transaction.

c. Increases ownership interest.

d. Declares and pays cash dividends to owners.

e. Increases in net assets in a period from nonowner sources.

f. Items characterized by service potential or future economic benefit.

g. Equals increase in assets less liabilities during the year, after adding distributions to owners and subtracting investments by owners.

h. Arises from income statement activities that constitute the entity's ongoing major or central operations.

i. Residual interest in the assets of the enterprise after deducting its liabilities.

j. Increases assets during a period through sale of product.

k. Decreases assets during the period by purchasing the company's own stock.

l. Includes all changes in equity during the period, except those resulting from investments by owners and distributions to owners.

E1.8 (LO 3) (Assumptions, Principles, and Constraint) Presented below are the assumptions, principles, and constraint used in this chapter.

1. Economic entity assumption

2. Going concern assumption

3. Monetary unit assumption

4. Periodicity assumption

5. Measurement principle (historical cost)

6. Measurement principle (fair value)

7. Expense recognition principle

8. Full disclosure principle

9. Cost constraint

10. Revenue recognition principle

Instructions

Identify by number the accounting assumption, principle, or constraint that describes each situation in the following list. Do not use a number more than once.

a. Allocates expenses to revenues in the proper period.

b. Indicates that fair value changes subsequent to purchase are not recorded in the accounts. (Do not use revenue recognition principle.)

c. Ensures that all relevant financial information is reported.

d. Rationale why plant assets are not reported at liquidation value. (Do not use historical cost principle.)

e. Indicates that personal and business record keeping should be separately maintained.

f. Separates financial information into time periods for reporting purposes.

g. Assumes that the dollar is the "measuring stick" used to report on financial performance.

E1.9 (LO 3) (Assumptions, Principles, and Constraint) Presented below are a number of operational guidelines and practices that have developed over time.

Instructions

Select the assumption, principle, or constraint that most appropriately justifies these procedures and practices. (Do not use qualitative characteristics.)

a. Fair value changes are not recognized in the accounting records.

b. Financial information is presented so that investors will not be misled.

c. Intangible assets are amortized over periods benefited.

d. Agricultural companies use fair value for purposes of valuing crops.

e. Each company is kept as a unit distinct from its owner or owners.

f. All significant post-balance-sheet events are disclosed.

g. Revenue is recorded when the product is delivered.

h. All important aspects of bond indentures are presented in financial statements.

i. Rationale for accrual accounting.

j. The use of consolidated statements is justified.

k. Reporting must be done at defined time intervals.

l. An allowance for doubtful accounts is established.

m. Goodwill is recorded only at time of purchase.

n. A company charges its sales commission costs to expense.

E1.10 (LO 3) (Full Disclosure Principle) Presented below are a number of facts related to Weller, Inc. Assume that no mention of these facts was made in the financial statements and the related notes.

Instructions

Assume that you are the auditor of Weller, Inc. and that you have been asked to explain the appropriate accounting and related disclosure necessary for each of these items.

a. The company decided that, for the sake of conciseness, only net income should be reported on the income statement. Details as to revenues, cost of goods sold, and expenses were omitted.

b. Equipment purchases of $170,000 were partly financed during the year through the issuance of a $110,000 notes payable. The company offset the equipment against the notes payable and reported plant assets at $60,000.

c. Weller has reported its ending inventory at $2,100,000 in the financial statements. No other information related to inventories is presented in the financial statements and related notes.

d. The company changed its method of valuing inventories from weighted-average to FIFO. No mention of this change was made in the financial statements.

E1.11 (LO 3) Groupwork (Accounting Principles and Assumptions—Comprehensive) Presented below are a number of business transactions that occurred during the current year for Gonzales, Inc.

Instructions

In each of the situations, discuss the appropriateness of the journal entries in terms of generally accepted accounting principles.

a. The president of Gonzales, Inc. used his expense account to purchase a new Tahoe solely for personal use. The following journal entry was made.

Miscellaneous Expense	63,000	
Cash		63,000

b. Merchandise inventory that cost $620,000 is reported on the balance sheet at $690,000, the expected selling price less estimated selling costs. The following entry was made to record this increase in value.

Inventory	70,000	
Sales Revenue		70,000

c. The company is being sued for $500,000 by a customer who claims damages for personal injury apparently caused by a defective product. Company attorneys feel extremely confident that the company will have no liability for damages resulting from the situation. Nevertheless, the company decides to make the following entry.

Loss from Lawsuit	500,000	
Liability for Lawsuit		500,000

d. Because the general level of prices increased during the current year, Gonzales, Inc. determined that there was a $16,000 understatement of depreciation expense on its equipment and decided to record it in its accounts. The following entry was made.

Depreciation Expense	16,000	
Accumulated Depreciation—Equipment		16,000

e. Because of a "fire sale," equipment obviously worth $200,000 was acquired at a cost of $155,000. The following entry was made.

Equipment	200,000	
Cash		155,000
Sales Revenue		45,000

E1.12 (LO 3) Groupwork (Accounting Principles—Comprehensive) Presented below is information related to Cramer, Inc.

Instructions

Comment on the appropriateness of the accounting procedures followed by Cramer, Inc.

a. Depreciation expense on the building for the year was $60,000. Because the building was increasing in value during the year, the controller decided to charge the depreciation expense to retained earnings instead of to net income. The following entry is recorded.

Retained Earnings	60,000	
Accumulated Depreciation—Buildings		60,000

b. Materials were purchased on January 1, 2025, for $120,000 and this amount was entered in the Materials account. On December 31, 2025, the materials would have cost $141,000, so the following entry is made.

Inventory	21,000	
Gain on Inventories		21,000

c. During the year, the company purchased equipment through the issuance of common stock. The stock had a par value of $135,000 and a fair value of $450,000. The fair value of the equipment was not easily determinable. The company recorded this transaction as follows.

Equipment	135,000	
Common Stock		135,000

d. During the year, the company sold certain equipment for $285,000, recognizing a gain of $69,000. Because the controller believed that new equipment would be needed in the near future, she decided to defer the gain and amortize it over the life of any new equipment purchased.

e. An order for $61,500 has been received from a customer for products on hand. This order was shipped on January 9, 2026. The company made the following entry in 2025.

Accounts Receivable	61,500	
Sales Revenue		61,500

Using Your Judgment

Financial Reporting Problem: The Procter and Gamble Company (P&G)

UYJ1.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. Using the notes to the consolidated financial statements, determine P&G's revenue recognition policies. Discuss the impact of trade promotions on P&G's financial statements.

b. Give two examples of where historical cost information is reported in P&G's financial statements and related notes. Give two examples of the use of fair value information reported in either the financial statements or related notes.

c. When will P&G adopt the new accounting pronouncements on revenue recognition and leasing?

d. What is P&G's accounting policy related to advertising? What accounting principle does P&G follow regarding accounting for advertising? Where are advertising expenses reported in the financial statements?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ1.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What are the primary lines of business of these two companies as shown in their notes to the financial statements?

b. Which company has the dominant position in beverage sales?

c. How are inventories for these two companies valued? What cost allocation method is used to report inventory? How does their accounting for inventories affect comparability between the two companies?

d. What future accounting policy changes do the companies discuss related to revenue recognition?

Accounting, Analysis, and Principles

UYJ1.3 William Murray achieved one of his life-long dreams by opening his own business, The Caddie Shack Driving Range, on May 1, 2025. He invested $20,000 of his own savings in the business. He paid $6,000 cash to have a small building constructed to house the operations and spent $800 on golf clubs, golf balls, and yardage signs. Murray leased 4 acres of land at a cost of $1,000 per month. (He paid the first month's rent in cash.) During the first month, advertising costs totaled $750, of which $150 was unpaid at the end of the month. Murray paid his three nephews $400 for retrieving golf balls. He deposited in the company's bank account all revenues from customers ($4,700). On May 15, Murray withdrew $800 in cash for personal use. On May 31, the company received a utility bill for $100 but did not immediately pay it. On May 31, the balance in the company bank account was $15,100.

Murray is feeling pretty good about results for the first month, but his estimate of profitability ranges from a loss of $4,900 to a profit of $1,650.

Accounting

Prepare a balance sheet at May 31, 2025. Murray appropriately records any depreciation expense on a quarterly basis. How could Murray have determined that the business operated at a profit of $1,650? How could Murray conclude that the business operated at a loss of $4,900?

Analysis

Assume Murray has asked you to become a partner in his business. Under the partnership agreement, after paying him $10,000, you would share equally in all future profits. Which of the two income measures above would be more useful in deciding whether to become a partner? Explain.

Principles

What is income according to GAAP? What concepts do the differences in the income measures for The Caddie Shack Driving Range illustrate?

Developing Your Professional Skills

Critical-Thinking Cases

CT1.1 (LO 1) (Securities and Exchange Commission) The U.S. Securities and Exchange Commission (SEC) was created in 1934 and consists of five commissioners and a large professional staff. The SEC professional staff is organized into five divisions and several principal offices. The primary objective of the SEC is to support fair securities markets. The SEC also strives to foster enlightened stockholder participation in corporate decisions of publicly traded companies. The SEC has a significant presence in financial markets, the development of accounting practices, and corporation-shareholder relations, and has the power to exert influence on entities whose actions lie within the scope of its authority.

Instructions

a. Explain from where the Securities and Exchange Commission receives its authority.

b. Describe the official role of the Securities and Exchange Commission in the development of financial accounting theory and practices.

c. Discuss the interrelationship between the Securities and Exchange Commission and the Financial Accounting Standards Board with respect to the development and establishment of financial accounting theory and practices.

(CMA adapted)

CT1.2 (LO 2) (Conceptual Framework—General) Wayne Cooper has some questions regarding the theoretical framework in which GAAP is set. He knows that the FASB and other predecessor organizations have attempted to develop a conceptual framework for accounting theory formulation. Yet, Wayne's supervisors have indicated that these theoretical frameworks have little value in the practical sense (i.e., in the real world). Wayne did notice that accounting rules seem to be established after the fact rather than before. He thought this indicated a lack of theory structure but never really questioned the process at school because he was too busy doing the homework.

Wayne feels that some of his anxiety about accounting theory and accounting semantics could be alleviated by identifying the basic concepts and definitions accepted by the profession and considering them in light of his current work. By doing this, he hopes to develop an appropriate connection between theory and practice.

Instructions

a. Help Wayne recognize the purpose of and benefit of a conceptual framework.

b. Identify any Statements of Financial Accounting Concepts issued by the FASB that may be helpful to Wayne in developing his theoretical background.

CT1.3 (LO 2, 4) Writing (Conceptual Framework—General) The Financial Accounting Standards Board (FASB) has developed a conceptual framework for financial accounting and reporting. The FASB has issued eight Statements of Financial Accounting Concepts. These statements are intended to set forth the objective and fundamentals that will be the basis for developing financial accounting and reporting standards. The objective identifies the goals and purposes of financial reporting. The fundamentals are the underlying concepts of financial accounting that guide the selection of transactions, events, and circumstances to be accounted for; their recognition and measurement; and the means of summarizing and communicating them to interested parties.

The purpose of the statement on qualitative characteristics is to examine the characteristics that make accounting information useful. These characteristics or qualities of information are the ingredients that make information useful and the qualities to be sought when accounting choices are made.

Instructions

a. Identify and discuss the benefits that can be expected to be derived from the FASB's conceptual framework.

b. What is the most important quality for accounting information as identified in the conceptual framework? Explain why it is the most important.

c. *Statement of Financial Accounting Concepts No. 8* describes a number of key characteristics or qualities for accounting information. Briefly discuss the importance of any three of these qualities for financial reporting purposes.

(CMA adapted)

CT1.4 (LO 2) (Objective of Financial Reporting) Homer Winslow and Jane Alexander are discussing various aspects of the FASB's concepts statement on the objective of financial reporting. Homer indicates that this pronouncement provides little, if any, guidance to the practicing professional in resolving accounting controversies. He believes that the statement provides such broad guidelines that it would be impossible to apply the objective to present-day reporting problems. Jane concedes this point but indicates that the objective is still needed to provide a starting point for the FASB in helping to improve financial reporting.

Instructions

a. Indicate the objective established in the conceptual framework.

b. What do you think is the meaning of Jane's statement that the FASB needs a starting point to resolve accounting controversies?

CT1.5 (LO 2) (Qualitative Characteristics) Accounting information provides useful information about business transactions and events. Those who provide and use financial reports must often select and evaluate accounting alternatives. The FASB statement on qualitative characteristics of accounting information examines the characteristics of accounting information that make it useful for decision-making. It also points out that various limitations inherent in the measurement and reporting process may necessitate trade-offs or sacrifices among the characteristics of useful information.

Instructions

a. Describe briefly the following characteristics of useful accounting information.

1. Relevance.

2. Faithful representation.

3. Understandability.

4. Comparability.

5. Consistency.

b. For each of the following pairs of information characteristics, give an example of a situation in which one of the characteristics may be sacrificed in return for a gain in the other.

1. Relevance and faithful representation.

2. Relevance and consistency.

3. Comparability and consistency.

4. Relevance and understandability.

c. What criterion should be used to evaluate trade-offs between information characteristics?

CT1.6 (LO 3) (Revenue Recognition Principle) After the presentation of your report on the examination of the financial statements to the board of directors of Piper Publishing Company, one of the new directors expresses surprise that the income statement assumes that an equal proportion of the revenue is recognized with the publication of every issue of the company's magazine. She feels that the "crucial event" in the process of earning revenue in the magazine business is the cash sale of the subscription. She says that she does not understand why most of the revenue cannot be "recognized" in the period of the cash sale.

Instructions

Discuss the propriety of timing the recognition of revenue in Piper Publishing Company's accounts with:

a. The cash sale of the magazine subscription.

b. The publication of the magazine every month.

c. Over time, as the magazines are published and delivered to customers.

CT1.7 (LO 3) (Expense Recognition Principle) An accountant must be familiar with the concepts involved in determining earnings of a business entity. The amount of earnings reported for a business entity is dependent on the proper recognition, in general, of revenues and expenses for a given time period. In some situations, costs are recognized as expenses at the time of product sale. In other situations, guidelines have been developed for recognizing costs as expenses or losses by other criteria.

Instructions

a. Explain the rationale for recognizing costs as expenses at the time of product sale.

b. What is the rationale underlying the appropriateness of treating costs as expenses of a period instead of assigning the costs to an asset? Explain.

c. In what general circumstances would it be appropriate to treat a cost as an asset instead of as an expense? Explain.

d. Some expenses are assigned to specific accounting periods on the basis of systematic and rational allocation of asset cost. Explain the underlying rationale for recognizing expenses on the basis of systematic and rational allocation of asset cost.

e. Identify the conditions under which it would be appropriate to treat a cost as a loss.

(AICPA adapted)

CT1.8 (LO 3) (Expense Recognition Principle) Accountants try to prepare income statements that are as accurate as possible. A basic requirement in preparing accurate income statements is to record costs and revenues properly. Proper recognition of costs and revenues requires that costs resulting from typical business operations be recognized in the period in which they expired.

Instructions

a. List three criteria that can be used to determine whether such costs should appear as charges in the income statement for the current period.

b. As generally presented in financial statements, the following items or procedures have been criticized as improperly recognizing costs. Briefly discuss each item from the viewpoint of matching costs with revenues and suggest corrective or alternative means of presenting the financial information.

1. Receiving and handling costs.

2. Cash discounts on purchases.

CT1.9 (LO 3) (Expense Recognition Principle) Daniel Barenboim sells and erects shell houses, that is, frame structures that are completely finished on the outside but are unfinished on the inside except for flooring, partition studding, and ceiling joists. Shell houses are sold chiefly to customers who are handy with tools and who have time to do the interior wiring, plumbing, wall completion and finishing, and other work necessary to make the shell houses livable dwellings.

Barenboim buys shell houses from a manufacturer in unassembled packages consisting of all lumber, roofing, doors, windows, and similar materials necessary to complete a shell house. Upon commencing operations in a new area, Barenboim buys or leases land as a site for its local warehouse, field office, and display houses. Sample display houses are erected at a total cost of $30,000 to $44,000 including the cost of the unassembled packages. The chief element of cost of the display houses is the unassembled packages, inasmuch as erection is a short, low-cost operation. Old sample models are torn down or altered into new models every 3 to 7 years. Sample display houses have little salvage value because dismantling and moving costs amount to nearly as much as the cost of an unassembled package.

Instructions

a. A choice must be made between (1) expensing the costs of sample display houses in the periods in which the expenditure is made and (2) spreading the costs over more than one period. Discuss the advantages of each method.

b. Would it be preferable to amortize the cost of display houses on the basis of (1) the passage of time or (2) the number of shell houses sold? Explain.

(AICPA adapted)

CT1.10 (LO 2) Writing (Qualitative Characteristics) Recently, your uncle, Carlos Beltran, who knows that you always have your eye out for a profitable investment, has discussed the possibility of your purchasing some corporate bonds. He suggests that you may wish to get in on the "ground floor" of this deal. The bonds being issued by Neville Corp. are 10-year debentures which promise a 40% rate of return. Neville manufactures novelty/party items.

You have told Uncle Carlos that, unless you can take a look at Neville's financial statements, you would not feel comfortable about such an investment. Believing that this is the chance of a lifetime, Uncle Carlos has procured a copy of Neville's most recent, unaudited financial statements which are a year old. These statements were prepared by Mrs. Andy Neville. You peruse these statements, and they are quite impressive. The balance sheet showed a debt-to-equity ratio of 0.10 and, for the year shown, the company reported net income of $2,424,240.

The financial statements are not shown in comparison with amounts from other years. In addition, no significant note disclosures about inventory valuation, depreciation methods, loan agreements, etc. are available.

Instructions

Write a letter to Uncle Carlos explaining why it would be unwise to base an investment decision on the financial statements that he has provided to you. Be sure to explain why these financial statements are neither relevant nor representationally faithful.

CT1.11 (LO 3, 4) Ethics (Expense Recognition Principle) Anderson Nuclear Power Plant will be "mothballed" at the end of its useful life (approximately 20 years) at great expense. The expense recognition principle requires that expenses be recognized as assets are used up or liabilities are incurred. Accountants Ana Alicia and Ed Bradley argue whether it is better to allocate the expense of mothballing over the next 20 years or ignore it until mothballing occurs.

Instructions

Answer the following questions.

a. What stakeholders should be considered?

b. What ethical issue, if any, underlies the dispute?

c. What alternatives should be considered?

d. Assess the consequences of the alternatives.

e. What decision would you recommend?

CT1.12 (LO 3) (Cost Constraint) The AICPA Special Committee on Financial Reporting proposed the following constraints related to financial reporting.

1. Business reporting should exclude information outside of management's expertise or for which management is not the best source, such as information about competitors.
2. Management should not be required to report information that would significantly harm the company's competitive position.
3. Management should not be required to provide forecasted financial statements. Rather, management should provide information that helps users forecast for themselves the company's financial future.
4. Other than for financial statements, management need report only the information it knows. That is, management should be under no obligation to gather information it does not have, or does not need, to manage the business.
5. Companies should present certain elements of business reporting only if users and management agree they should be reported—a concept of flexible reporting.
6. Companies should not have to report forward-looking information unless there are effective deterrents to unwarranted litigation that discourages companies from doing so.

Instructions

For each item, briefly discuss how the proposed constraint addresses concerns about the costs and benefits of financial reporting.

CT1.13 (LO 4) Ethics (Rule-Making Issues) When the FASB issues new pronouncements, the implementation date is usually 12 months from date of issuance, with early implementation encouraged. Karen Weller, controller, discusses with her financial vice president the need for early implementation of a rule that would result in a fairer presentation of the company's financial condition and earnings. When the financial vice president determines that early implementation of the rule will adversely affect the reported net income for the year, he discourages Weller from implementing the rule until it is required.

Instructions

Answer the following questions.

a. What, if any, is the ethical issue involved in this case?

b. Is the financial vice president acting improperly or immorally?

c. What does Weller have to gain by advocacy of early implementation?

d. Which stakeholders might be affected by the decision against early implementation?

(CMA adapted)

CT1.14 (LO 4) (Models for Setting GAAP) Presented below are three models for setting GAAP.

1. The purely political approach, where national legislative action decrees GAAP.
2. The private, professional approach, where GAAP is set and enforced by private professional actions only.

3. The public/private mixed approach, where GAAP is basically set by private-sector bodies that behave as though they were public agencies and whose standards to a great extent are enforced through governmental agencies.

Instructions

a. Which of these three models best describes standard-setting in the United States? Provide justification for your answer.

b. Why do companies, financial analysts, labor unions, industry trade associations, and others take such an active interest in standard-setting?

c. Cite an example of a group other than the FASB that attempts to establish accounting standards. Speculate as to why another group might wish to set its own standards.

CT1.15 (LO 4) (Economic Consequences) Presented below are comments made in the financial press.

Instructions

Prepare responses to the requirements in each item.

a. Rep. John Dingell, at one time the ranking Democrat on the House Commerce Committee, threw his support behind the FASB's controversial derivatives accounting standard and encouraged the FASB to adopt the rule promptly. Indicate why a member of Congress might feel obligated to comment on this proposed FASB standard.

b. In a strongly worded letter to Senator Lauch Faircloth (R-NC) and House Banking Committee Chairman Jim Leach (R-IA), the American Institute of Certified Public Accountants (AICPA) cautioned against government intervention in the accounting standard-setting process, warning that it had the potential of jeopardizing U.S. capital markets. Explain how government intervention could possibly affect capital markets adversely.

CT1.16 (LO 4) Groupwork (GAAP and Economic Consequences) The following letter was sent to the SEC and the FASB by leaders of the business community.

> Dear Sirs:
>
> The FASB has been struggling with accounting for derivatives and hedging for many years. The FASB has now developed, over the last few weeks, a new approach that it proposes to adopt as a final standard. We understand that the Board intends to adopt this new approach as a final standard without exposing it for public comment and debate, despite the evident complexity of the new approach, the speed with which it has been developed and the significant changes to the exposure draft since it was released more than one year ago. Instead, the Board plans to allow only a brief review by selected parties, limited to issues of operationality and clarity, and would exclude questions as to the merits of the proposed approach.
>
> As the FASB itself has said throughout this process, its mission does not permit it to consider matters that go beyond accounting and reporting considerations. Accordingly, the FASB may not have adequately considered the wide range of concerns that have been expressed about the derivatives and hedging proposal, including concerns related to the potential impact on the capital markets, the weakening of companies' ability to manage risk, and the adverse control implications of implementing costly and complex new rules imposed at the same time as other major initiatives, including the Year 2000 issues and a single European currency. We believe that these crucial issues must be considered, if not by the FASB, then by the Securities and Exchange Commission, other regulatory agencies, or Congress.
>
> We believe it is essential that the FASB solicit all comments in order to identify and address all material issues that may exist before issuing a final standard. We understand the desire to bring this process to a prompt conclusion, but the underlying issues are so important to this nation's businesses, the customers they serve and the economy as a whole that expediency cannot be the dominant consideration. As a result, we urge the FASB to expose its new proposal for public comment, following the established due process procedures that are essential to acceptance of its standards, and providing sufficient time to affected parties to understand and assess the new approach.
>
> We also urge the SEC to study the comments received in order to assess the impact that these proposed rules may have on the capital markets, on companies' risk management practices, and on management and financial controls. These vital public policy matters deserve consideration as part of the Commission's oversight responsibilities.
>
> We believe that these steps are essential if the FASB is to produce the best possible accounting standard while minimizing adverse economic effects and maintaining the competitiveness of U.S. businesses in the international marketplace.
>
> Very truly yours,
>
> (This letter was signed by the chairs of 22 of the largest U.S. companies.)

Instructions

Answer the following questions.

a. Explain the "due process" procedures followed by the FASB in developing a financial reporting standard.

b. What is meant by the term "economic consequences" in accounting standard-setting?

c. What economic consequences arguments are used in this letter?

d. What do you believe is the main point of the letter?

e. Why do you believe a copy of this letter was sent by the business community to influential members of the U.S. Congress?

FASB Codification

References

[1] FASB ASC 205-40. [Predecessor literature: None.]
[2] FASB ASC 205. [Predecessor literature: None.]
[3] FASB ASC 820-10. [Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006).]
[4] FASB ASC 606. [Predecessor literature: None.]
[5] FASB ASC 718-10. [Predecessor literature: "Share-Based Payment," *Financial Accounting Standards No. 123(R)* (Norwalk, Conn.: FASB, 2004).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE1.1 Describe the main elements of the link labeled "Help, FAQ, Learning Guide, and About the Codification."

CE1.2 Describe the procedures for providing feedback.

CE1.3 Briefly describe the purpose and content of the "What's New" link.

CE1.4 Access the glossary ("Master Glossary") at the FASB Codification website to answer the following.

a. What is the definition of fair value?

b. What is the definition of revenue?

c. What is the definition of comprehensive income?

CE1.5 Briefly describe how the organization of the FASB Codification corresponds to the elements of financial statements.

Codification Research Case

Your aunt recently received the annual report for a company in which she has invested. The report notes that the statements have been prepared in accordance with "generally accepted accounting principles." She has also heard that certain terms have special meanings in accounting relative to everyday use. She would like you to explain the meaning of terms she has come across related to accounting.

Instructions

Go to the FASB website and access the FASB Concepts Statements and respond to the following items. (Provide paragraph citations.) When you have accessed the documents, you can use the search tool in your Internet browser.

a. How is "materiality" defined in the conceptual framework?

b. The concepts statements provide several examples in which specific quantitative materiality guidelines are provided to firms. Identify at least two of these examples. Do you think the materiality guidelines should be quantified? Why or why not?

c. The concepts statements discuss the concept of "articulation" between financial statement elements. Briefly summarize the meaning of this term and how it relates to an entity's financial statements.

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

IFRS Insights

LEARNING OBJECTIVE 5

Compare GAAP and IFRS and their standard-setting process.

Most agree that there is a need for one set of international accounting standards. Here is why:

- **Multinational corporations**. Today's companies view the entire world as their market. For example, **Coca-Cola**, **Intel**, and **McDonald's** generate more than 50 percent of their sales outside the United States, and many foreign companies, such as **Toyota**, **Nestlé**, and **Sony**, find their largest market to be the United States.
- **Mergers and acquisitions.** The mergers between **Fiat/Chrysler** and **Vodafone/Mannesmann** suggest that we will see even more such business combinations in the future.
- **Information technology**. As communication barriers continue to topple through advances in technology, companies and individuals in different countries and markets are becoming more comfortable buying and selling goods and services from one another.
- **Financial markets**. Financial markets are of international significance today. Whether it is currency, equity securities (stocks), bonds, or derivatives, there are active markets throughout the world trading these types of instruments.

The IASB and the FASB originally planned to develop a common conceptual framework. The Boards converged on two subjects: *Objectives of Financial Reporting* and *Qualitative Characteristics of Accounting Information*. However, the IASB decided it was important to move forward and complete other parts of the conceptual framework (which it did in 2018). The FASB did not join in on this effort although it is advancing its own work plan to modify its existing conceptual framework as well. Both Boards have the same objective, that is, to develop a conceptual framework consisting of standards that are principles-based and internally consistent, thereby leading to the most useful financial reporting. Hopefully, the two Boards will eventually agree on the key components of a common conceptual framework.

Following are the key similarities and differences between GAAP (the standards issued by the Financial Accounting Standards Board) and IFRS related to the financial reporting environment.

Similarities

- Generally accepted accounting principles (GAAP) for U.S. companies are developed by the Financial Accounting Standards Board (FASB). The FASB is a private organization. The Securities and Exchange Commission (SEC) exercises oversight over the actions of the FASB. The IASB is also a private organization. Oversight over the actions of the IASB is regulated by IOSCO.
- Both the IASB and the FASB have essentially the same governance structure, that is, a Foundation that provides oversight, a Board, an Advisory Council, and an Interpretations Committee. In addition, a general body that involves the public interest is part of the governance structure.
- Both the IASB and the FASB are working together to find common grounds for convergence. A good example is the recent issuance of a new standard on revenue recognition that both organizations support.
- As indicated above, the IASB has recently completed its conceptual framework, whereas the FASB has not. However, many of the concepts that are covered in the new IASB conceptual framework are consistent with the FASB current framework and related standards.
- The objective of financial reporting and the qualitative characteristics of useful financial information are essentially the same between the two frameworks.

- Both frameworks have similar measurement principles, based on historical cost and fair value concepts. The mixed model (historical cost and fair value) is essentially the same in the two frameworks. In 2011, the Boards issued a converged standard on fair value measurement so that the definition of fair value, measurement techniques, and disclosures are the same between GAAP and IFRS when fair value is used in financial statements.

Differences

- GAAP is more detailed or rules-based. IFRS tends to be simpler and more flexible in its accounting and disclosure requirements. The difference in approach has resulted in a debate about the merits of principles-based versus rules-based standards.
- Differences between GAAP and IFRS should not be surprising because standard-setters have developed standards in response to different user needs. In some countries, the primary users of financial statements are private investors. In others, the primary users are tax authorities or central government planners. In the United States, investors and creditors have driven accounting-standard formulation.
- The IASB gives more emphasis to stewardship in its conceptual framework. The framework indicates that users need information about the resources of the entity not only to assess an entity's prospects for future cash inflows but also to determine how effectively and efficiently management has discharged their responsibilities to use the entity's existing resources (i.e., stewardship). In other words, the IASB conceptual framework explicitly discusses the need to provide information related to stewardship of an entity's resources as well as the need for information to help users understand the prospects for future net cash inflows to the entity.
- The concept of prudence is introduced to support the principle of neutrality in relation to the purpose of faithful representation. Prudence is defined as the exercise of caution when making judgments under conditions of uncertainty. As an example, prudence means that revenues are not overstated, and expenses are not understated.
- The IASB also clarified two other concepts—measurement uncertainty and substance over form. The framework indicates that measurement uncertainty does not prevent information from being useful. However, in some cases the most relevant information may have such a high degree of uncertainty that the most useful information is that which is slightly less relevant but is subject to lower measurement uncertainty.
- Although both GAAP and IFRS are increasing the use of fair value to report assets, at this point IFRS has adopted it more broadly. As examples, under IFRS, companies can apply fair value to property, plant, and equipment; natural resources; and, in some cases, intangible assets.
- The monetary unit assumption is part of each framework. However, the unit of measure will vary depending on the currency used in the country in which the company is incorporated (e.g., Chinese yuan, Japanese yen, and British pound). IFRS makes an explicit assumption that financial statements are prepared on an accrual basis.
- The economic entity assumption is also part of each framework although some cultural differences result in differences in its application. For example, in Japan many companies have formed alliances that are so strong that they act similar to related corporate divisions although they are not actually part of the same company. IFRS defines a reporting entity as one that is required to (or chooses to) prepare financial statements. A reporting entity does not need to be a legal entity; it could be a portion of an entity or a combination of entities. GAAP uses a different definition (more aligned with legal entities).
- As indicated earlier, the IASB has developed a new conceptual framework. In the revised conceptual framework, the IASB has introduced two new qualitative characteristics: prudence and substance over form. Also, as noted in the next section, the IASB is making modifications to other parts of its conceptual framework by revising the definitions of a number of the elements. The IASB is also introducing updated chapters on such items as measurement, classification of income and expense, derecognition of assets and liabilities, and the reporting entity.

Additional IFRS Resources

Additional IFRS discussion with assessment is available online at Wiley Course Resources. For those who want even more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 2

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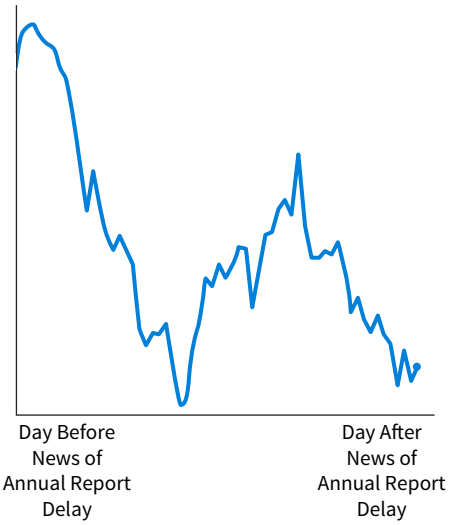
The Accounting Information System

WHAT is the accounting information system?

An **accounting information system** collects and processes transaction data and then disseminates the information in financial statements to interested parties. While the type of accounting system may vary due to the nature of the business, the transactions in which it engages, and the size of the company, all accounting information systems have the common objective to ensure relevant and reliable information is reported in financial statements.



WHY is an accounting information system important?

As you learned in Chapter 1, the value of information rests in its usefulness in decision-making. A good accounting information system produces financial statements, which help investors and creditors answer such questions as:

- How much and what kind of debt is outstanding?
- Were sales higher this period than last?
- What assets does the company have?
- What are the cash inflows and outflows?
- Is the rate of return on net assets increasing?

If the accounting system is not working well, the consequences can be negative and significant.

For example, **Tupperware** recently suffered a 43% decline in its stock price after it disclosed that an internal accounting probe into its sales and profit numbers would cause it to delay release of its annual report. As shown in the adjacent chart, the market viewed that news quite negatively, which reinforces the importance of a good accounting information system.

HOW do accounting information systems work?

Whether a company is large or small, or whether it uses a manual or computerized system, the process is pretty much the same. It begins by capturing and summarizing basic transactions, recording the effects of those transactions in a journal, and then posting to accounts. Following adjusting entries, the account balances are summarized in a trial balance, from which financial statements can be prepared and disseminated to decision-makers (investors, creditors, management).

Source: M. Maidenberg, "Tupperware Shares Plunge as Company Seeks Delay for Annual Report," *Wall Street Journal* (Feb. 25, 2020).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE	
LO 2.1 Explain the basic concepts of an accounting information system.	**2.1 Accounting Information System** • Computerized accounting systems • Manual accounting systems • Debits and credits • Accounting equation • Financial statements and ownership structure • The accounting cycle	Put It into Practice LO 2.1	**Analyze Transactions Using the Accounting Equation**
LO 2.2 Record and summarize accounting transactions.	**2.2 Analyze and Record Business Transactions** • Recording process • The journal • The ledger • Chart of accounts • Recording process illustrated • Trial balance	Put It into Practice LO 2.2	**Journalize, Post, and Prepare a Trial Balance**
LO 2.3 Identify and prepare adjusting entries.	**2.3 Adjusting Entries** • Types of adjusting entries • Deferrals • Accruals • Adjusted trial balance	Put It into Practice LO 2.3	**Prepare Adjusting Entries and Show Their Effects on the Trial Balance**
LO 2.4 Prepare financial statements from the adjusted trial balance and prepare closing entries.	**2.4 Preparing Financial Statements** • Closing • Post-closing trial balance • Reversing entries • Summary	Put It into Practice LO 2.4	**Complete the Closing Process**
LO 2.5 Prepare financial statements for a merchandising company.	**2.5 Financial Statements for a Merchandising Company** • Income statement • Retained earnings statement • Balance sheet • Closing entries		

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and problems with solutions, are available in Wiley Course Resources.

2.1 Accounting Information System

LEARNING OBJECTIVE 1

Explain the basic concepts of an accounting information system.

The **accounting information system** collects and processes transaction data and communicates financial information to decision-makers. Features include:

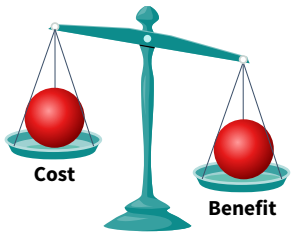
- Each of the steps in the accounting cycle that you studied in earlier courses.
- The documents that provide evidence of the transactions.
- The records, trial balances, worksheets (spreadsheets), and financial statements that result.

An accounting system may be either manual or computerized. Most businesses use some sort of computerized accounting system, whether it is an off-the-shelf system for small businesses, like QuickBooks®, Xero, or Sage 50, or a more complex, custom-made system.

Efficient and effective accounting information systems are based on certain basic principles. These principles, as described in **Illustration 2.1**, are (1) cost-effectiveness, (2) usefulness, and (3) flexibility. If the accounting system is cost-effective, provides useful output, and has the flexibility to meet future needs, it can contribute to both individual and organizational goals.

ILLUSTRATION 2.1 Principles of an Efficient and Effective Accounting Information System

Cost-Effectiveness

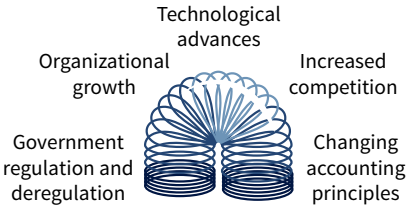


The benefits of the information provided by the accounting system must outweigh the costs of providing it.

Useful Output

To be useful, the accounting system must provide information that is understandable, relevant, reliable, timely, and accurate.

Flexibility



The accounting system should be sufficiently flexible to accommodate a variety of users and changing information needs.

Computerized Accounting Systems

All but the smallest businesses use a computerized general ledger accounting system. **General ledger accounting systems** are software programs that integrate the various accounting functions related to sales, purchases, receivables, payables, cash receipts and disbursements, and payroll. They also generate financial statements. Computerized systems have a number of advantages over manual systems as follows.

- Information needs to be entered only once in a computerized system.
- The computer performs most steps automatically, which eliminates many errors resulting from human intervention in a manual system, such as errors in posting or preparation of financial statements.
- Computerized systems provide up-to-the-minute information, which is more useful for decision-making.

Built-in internal controls is another important feature of all systems; things like tracking access to the system and requiring all entries to have equal debits and credits helps ensure the integrity of accounting data.

Software publishers tend to classify businesses into groups based on revenue and the number of employees.

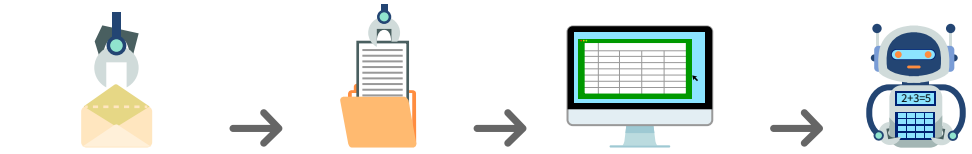
- Companies with revenues of less than $5 million and up to 20 employees generally use **entry-level programs**. These entry-level programs comes in many different industry-specific versions, such as for restaurants, retailing, construction, manufacturing, or nonprofit.
- **Enterprise resource planning (ERP) systems** are typically used by manufacturing companies with more than 500 employees and $500 million in sales. An ERP system integrates all aspects of the organization, including accounting, sales, human resource management, and manufacturing. Because of the complexity of an ERP system, implementation can take several years and cost five times as much as the purchase price of the system, thereby representing a significant investment for the largest multinational corporations.

Accounting Matters — Accounting and Bots?

A bot (software robot) allows companies to automate repetitive tasks, such as billing customers or paying vendor invoices. And you might be surprised to learn that many accounting professionals with no programming background are creating bots to make their processes more efficient! **Robotic process automation (RPA) systems** are designed to be user-friendly and help companies create efficiencies in their business processes.

Consider the process of receiving an invoice from a vendor. What is normally a tedious process of manually entering invoices into the accounting system, matching details to a purchase order, and then ultimately paying the vendor can be automated such that the accountant is only looking at exceptions, as the following illustration shows.

Accounts Payable Bot Transaction



The bot monitors an email account looking for invoices from vendors.

The bot then saves the invoices to an accounts payable folder.

The bot transfers relevant information from the A/P folder to an Excel spreadsheet daily.

The bot checks the purchase order on the vendor invoice and either approves for payment or flags for human review.

Does this mean accountants are no longer needed? Not at all. However, it does mean that the work you will do right out of school will probably be higher-level work and more fun. For now, you don't need to start studying programming on the weekends. But you are expected to adapt to emerging technologies when you join the profession. Technology agility is of increasing importance for all business majors.

Source: Wendy Tietz, Jennifer Cainas, and Tracie Miller-Nobles, "The Bots Are Coming . . . to Intro Accounting," *Strategic Finance* (August 1, 2020).

Manual Accounting Systems

In **manual accounting systems**, someone performs each of the steps in the accounting cycle by hand. For example, someone manually enters each accounting transaction in the journal and manually posts each journal entry to the ledger. Other manual computations must be made to obtain ledger account balances and to prepare a trial balance and financial statements. In the remainder of this chapter, we illustrate the use of a manual system.

You might be wondering, "Why cover manual accounting systems if the real world uses computerized systems?" There are two main reasons for this.

1. **Small businesses still abound.** Most of them begin operations with manual accounting systems and convert to computerized systems as the business grows. You may work in a small business or start your own someday, so it is useful to know how a manual system works.
2. **To understand what computerized accounting systems do, you need to understand the mechanics of manual accounting systems.** For example, when you close an accounting period in a computerized system, you need to understand what that process entails as there is no going back. Your temporary accounts are now closed out and your adjusted trial balance only includes permanent balance sheet accounts.

The manual accounting system represented in this chapter is satisfactory for a company with a low volume of transactions. However, in most companies, it is necessary to add additional ledgers and journals to the accounting system to record transaction data efficiently.

Debits and Credits

The terms **debit** (Dr.) and **credit** (Cr.) mean left and right, respectively. These terms do not mean increase or decrease, but instead describe **where** a company makes entries in the recording process.

- An entry on the left side of an account is a **debit to** the account.
- An entry on the right side is a **credit to** the account.
- An account shows a **debit balance** if the total of the debit amounts exceeds the credits.
- An account shows a **credit balance** if the credit amounts exceed the debits.

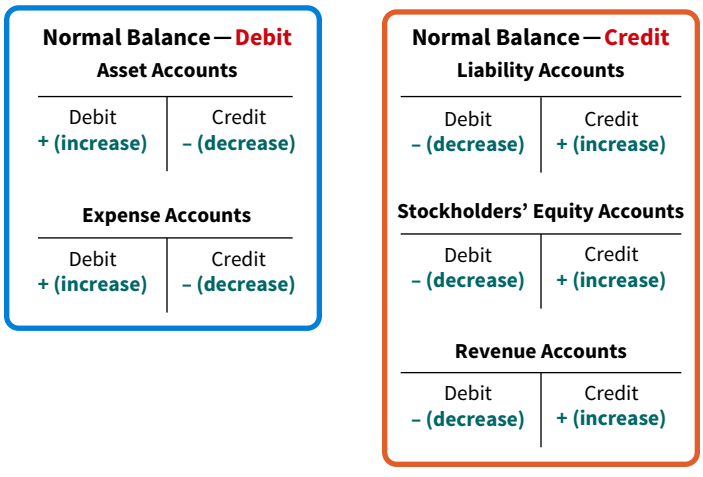
The positioning of debits on the left and credits on the right is simply an accounting custom. We could function just as well if we reversed the sides. However, the United States adopted the custom, now the rule, of having debits on the left side of an account and credits on the right side, similar to the custom of driving on the right-hand side of the road. This rule applies to all accounts.

The equality of debits and credits provides the basis for the double-entry system of recording transactions (sometimes referred to as double-entry bookkeeping). Under the universally used **double-entry accounting** system, a company records the dual (two-sided) effect of each transaction in appropriate accounts.

- This system offers a means of proving the accuracy of the recorded amounts.
- If a company records every transaction with equal debits and credits, then the sum of all the debits to the accounts must equal the sum of all the credits.

Illustration 2.2 presents the basic guidelines for an accounting system. Increases to all asset and expense accounts occur on the left (or debit side) and decreases on the right (or credit side). Conversely, increases to all liability, revenue, and most stockholders' equity accounts occur on the right (or credit side) and decreases on the left (or debit side). A company increases stockholders' equity accounts, such as Common Stock and Retained Earnings, on the credit side but increases Dividends on the debit side.

ILLUSTRATION 2.2 Double-Entry (Debit and Credit) Accounting System

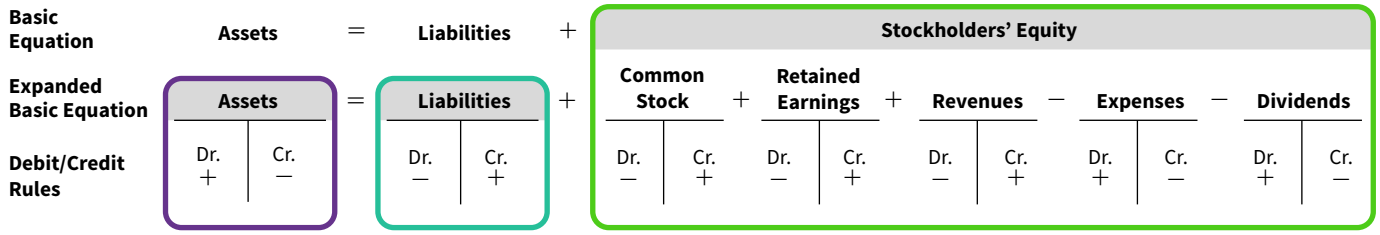


The Accounting Equation

In a double-entry system, for every debit there must be a credit, and vice versa. This leads us, then, to the basic equation in accounting.

Illustration 2.3 expands this equation to show the accounts that make up stockholders' equity. The figure also shows the debit/credit rules and effects on each type of account. Study this diagram carefully. It will help you understand the fundamentals of the double-entry system. Like the basic equation, the expanded equation must also balance (total debits equal total credits).

ILLUSTRATION 2.3 Expanded Equation and Debit/Credit Rules and Effects


Basic Equation
Assets = Liabilities + Stockholders' Equity
Expanded Basic Equation
Assets = Liabilities + Stockholders' Equity
Common Stock + Retained Earnings + Revenues − Expenses − Dividends
Debit/Credit Rules
Dr. + Cr. −
Dr. − Cr. +
Dr. − Cr. +
Dr. − Cr. +
Dr. − Cr. +
Dr. + Cr. −
Dr. + Cr. −

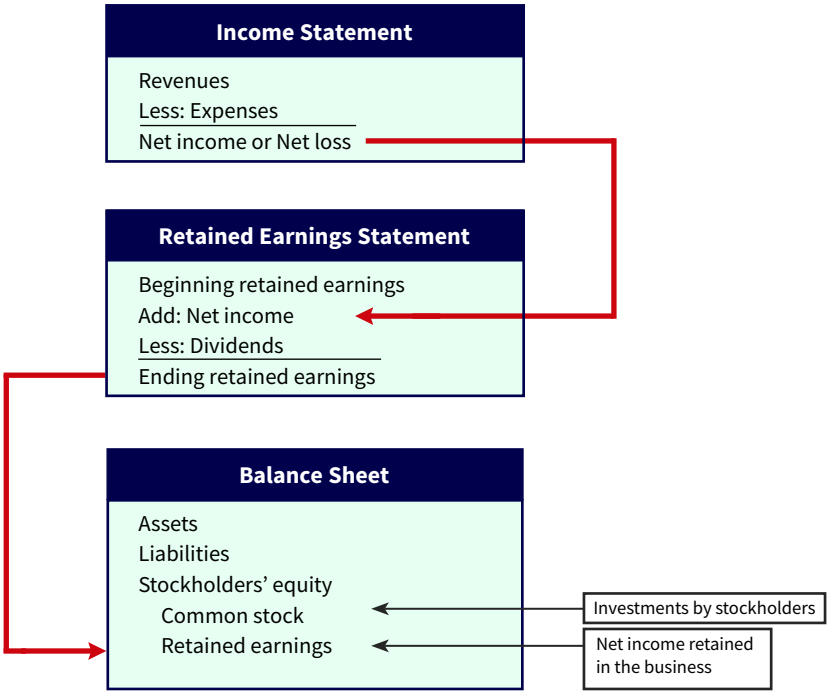
Every time a transaction occurs, the elements of the accounting equation change. However, the basic equality remains. To illustrate, consider the following eight different transactions for Perez Inc.

		Assets		Liabilities		Stockholders' Equity
1	Owners invest $40,000 in exchange for common stock.	+ 40,000	=		+	+ 40,000
2	Disburse $600 cash for administrative wages.	– 600	=		+	– 600 (expense)
3	Purchase office equipment priced at $5,200, giving a 10% promissory note in exchange.	+ 5,200	=	+5,200	+	
4	Receive $4,000 cash for services performed.	+ 4,000	=		+	+ 4,000 (revenue)
5	Pay off a short-term liability of $7,000.	– 7,000	=	– 7,000	+	
6	Declare a cash dividend of $5,000.		=	+ 5,000	+	– 5,000
7	Convert a long-term liability of $80,000 into common stock.		=	– 80,000	+	+ 80,000
8	Pay cash of $16,000 for a delivery van.	–16,000 +16,000	=		+	

Financial Statements and Ownership Structure

The stockholders' equity section of the balance sheet reports common stock and retained earnings. The income statement reports revenues and expenses. The retained earnings statement reports net income/loss and dividends. Because a company transfers dividends, revenues, and expenses to retained earnings at the end of the period, a change in any one of these three items affects stockholders' equity. Illustration 2.4 shows the stockholders' equity relationships.

ILLUSTRATION 2.4 Financial Statements and Ownership Structure



The company's ownership structure dictates the types of accounts that are part of or affect the stockholders' equity section.

- A corporation commonly uses Common Stock, Paid-in Capital in Excess of Par, Dividends, and Retained Earnings accounts.
- A proprietorship or a partnership uses an Owner's Capital account and an Owner's Drawings account. An Owner's Capital account indicates the owner's or owners' investment in the company. An Owner's Drawings account tracks withdrawals by the owner(s).

Illustration 2.5 summarizes and relates the transactions affecting equity to the nominal (temporary) and real (permanent) classifications and to the types of business ownership.

ILLUSTRATION 2.5 Effects of Transactions on Equity Accounts

		Proprietorships and Partnerships		Corporations	
Transactions Affecting Owners' or Stockholders' Equity	**Impact on Owners' or Stockholders' Equity**	**Nominal (Temporary) Accounts**	**Real (Permanent) Accounts**	**Nominal (Temporary) Accounts**	**Real (Permanent) Accounts**
Investment by owner(s)	Increase		Capital		Common Stock and related accounts
Revenues recognized	Increase	Revenue		Revenue	
Expenses incurred	Decrease	Expense	Capital	Expense	Retained Earnings
Withdrawal by owner(s)	Decrease	Drawings		Dividends	

The Accounting Cycle

The steps in the **accounting cycle** are the procedures that companies use to record transactions and prepare financial statements.

1. Analyze business transactions.
2. Journalize (enter) the transactions of the period in appropriate journals.
3. Post from the journals to the ledger (or ledgers).
4. Prepare an unadjusted trial balance (trial balance).
5. Prepare adjusting journal entries and post to the ledger(s).
6. Prepare a trial balance after adjusting (adjusted trial balance).
7. Prepare the financial statements from the adjusted trial balance.
8. Prepare closing journal entries and post to the ledger(s).
9. Prepare a post-closing trial balance (**optional**).

A company usually completes the accounting cycle in every fiscal period. We will discuss all of the individual steps in this chapter.

Put It into Practice LO 2.1

Analyze Transactions Using the Accounting Equation

FACTS Speedy Delivery Inc. was incorporated on July 1, 2025. During the first month of operations, the following transactions occurred.

1. Stockholders invested $10,000 in cash in exchange for common stock of Speedy Delivery Inc.
2. Paid $800 for July rent.
3. Purchased office equipment on account $3,000.
4. Performed delivery service for clients for cash $1,500.
5. Borrowed $700 cash from a bank on a note payable.
6. Performed delivery services for client on account $2,000.
7. Paid monthly expenses: salaries $500, utilities $300, and advertising $100.

INSTRUCTIONS

Prepare a tabular summary of the effects of these transactions on the accounting equation.

SOLUTION

	Assets				=	Liabilities		+	Stockholders' Equity					
										Retained Earnings				
Transaction	Cash	+	Accounts Receivable	+ Equipment	=	Notes Payable	+ Accounts Payable	+	Common Stock	+ Rev.	− Exp.	− Div.		
(1)	+$10,000				=				+$10,000					Issued Stock
(2)	−800										−$ 800			Rent Expense
(3)				+$3,000	=		+$3,000							Purch. Equip.
(4)	+1,500									+$1,500				Service Revenue
(5)	+700					+$700								Borrowing
(6)			+$2,000							+2,000				Service Revenue
(7)	−500										−500			Sal./Wages Exp.
	−300										−300			Utilities Exp.
	−100										−100			Adv. Exp.
	$10,500	+	$2,000	+ $3,000	=	$700	+ $3,000	+	$10,000	+ $3,500	− $1,700			
			$15,500				$15,500							

2.2 Analyze and Record Business Transactions

LEARNING OBJECTIVE 2

Record and summarize accounting transactions.

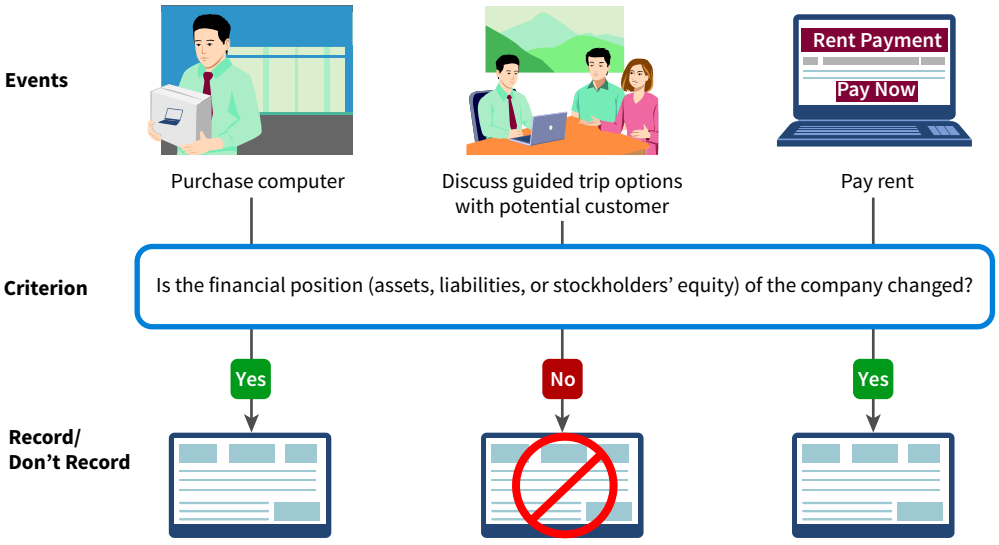
Analyze business transactions → JOURNALIZE → POST → TRIAL BALANCE → ADJUSTING ENTRIES → ADJUSTED TRIAL BALANCE → FINANCIAL STATEMENTS → CLOSING ENTRIES → POST-CLOSING TRIAL BALANCE

Transactions (**business transactions**) are a business's economic events recorded by accountants. Transactions may be external or internal.

- **External transactions** involve economic events between the company and some outside enterprise. For example, Campus Pizza's purchase of cooking equipment from a supplier, payment of monthly rent to the landlord, and sale of pizzas to customers are external transactions.
- **Internal transactions** are economic events that occur entirely within one company. The use of cooking and cleaning supplies are internal transactions for Campus Pizza.

Companies also carry on many activities that do not represent business transactions. Examples are hiring employees, responding to e-mails, talking with customers, and placing merchandise orders. Some of these activities may lead to business transactions. For example, employees will earn wages, and suppliers will deliver ordered merchandise. The company must analyze each event to find out if it affects the components of the accounting equation. If it does, the company will record the transaction. **Illustration 2.6** demonstrates the transaction identification process.

ILLUSTRATION 2.6 Transaction Identification Process



Each transaction must have a dual effect on the accounting equation. If an asset is increased, one of the following must occur:

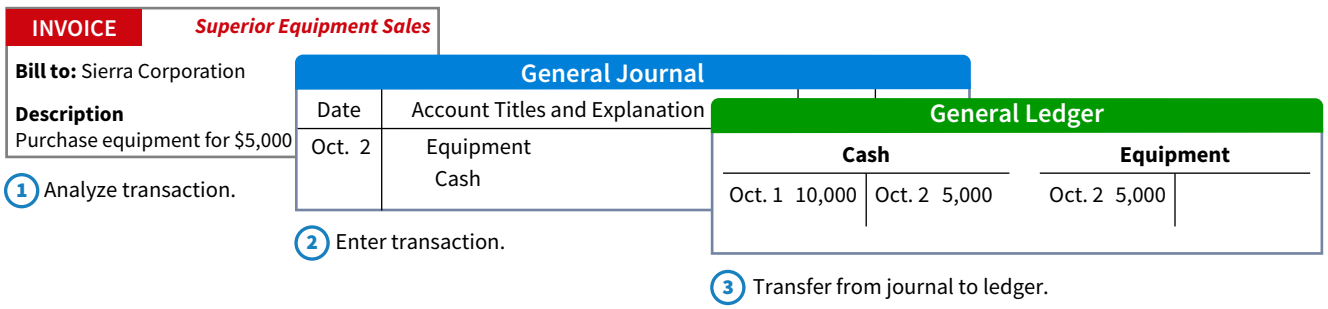
1. Decrease in another asset.
2. Increase in a specific liability.
3. Increase in stockholders' equity.

A transaction could affect two or more items in the accounting equation. For example, a company could purchase a $10,000 piece of equipment (increase in assets) and pay $6,000 in cash now (decrease in assets) and agree to pay the $4,000 balance in 30 days (increase in liabilities). Any change in a liability or ownership claim is subject to similar analysis.

The Recording Process

Although it is possible to enter transaction information directly into the accounts, few businesses do so. Practically every business uses the basic steps shown in **Illustration 2.7** in the recording process (an integral part of the accounting cycle).

ILLUSTRATION 2.7 The Recording Process



The first steps in the recording process occur repeatedly. In the prior section, we illustrated the first step, the analysis of transactions, and will give further examples later in this chapter. The other two steps in the recording process are explained next.

The Journal

Companies initially record transactions in chronological order (the order in which they occur). Thus, the **journal** is referred to as the book of original entry. For each transaction, the journal shows the debit and credit effects on specific accounts.

Companies may use various kinds of journals, but every company has the most basic form of a journal, a **general journal**. Typically, a general journal has spaces for dates, account titles and explanations, references, and two amount columns. *Whenever we use the term "journal" in this text, we mean the general journal unless we specify otherwise.*

The journal makes several significant contributions to the recording process:

1. It discloses in one place the **complete effects of a transaction**.
2. It provides a **chronological record** of transactions.
3. It helps to **prevent or locate errors** because the debit and credit amounts for each entry can be easily compared.

Journalizing

Entering transaction data in the journal is known as **journalizing**. Companies make separate journal entries for each transaction. A complete entry consists of:

1. The date of the transaction.
2. The accounts and amounts to be debited and credited.
3. A brief explanation of the transaction.

Illustration 2.8 shows the technique of journalizing using two transactions for a typical company: (1) on September 1, stockholders invested $15,000 cash in the corporation in exchange for common stock, and (2) the company purchased computer equipment for $7,000 cash. The number J1 indicates that these two entries are recorded on the first page of the journal. The circled numbers in Illustration 2.8 correspond to explanations in the list after the illustration.

ILLUSTRATION 2.8 Technique of Journalizing

General Journal					J1
Date		**Account Titles and Explanation**	**Ref.**	**Debit**	**Credit**
2025			(5)		
Sept. 1	(2)	Cash		15,000	
(1)	(3)	Common Stock			15,000
	(4)	(Issued common stock for cash)			
1		Equipment		7,000	
		Cash			7,000
		(Purchase of equipment for cash)			

(1) The date of the transaction is entered in the Date column.

(2) The debit account title (that is, the account to be debited) is entered first at the extreme left margin of the column headed "Account Titles and Explanation," and the amount of the debit is recorded in the Debit column.

(3) The credit account title (that is, the account to be credited) is indented and entered on the next line in the column headed "Account Titles and Explanation," and the amount of the credit is recorded in the Credit column.

(4) A brief explanation of the transaction appears on the line below the credit account title. A space is left between journal entries. The blank space separates individual journal entries and makes the entire journal easier to read.

(5) The column titled Ref. (which stands for Reference) is left blank when the journal entry is made. This column is used later when the journal entries are transferred (posted) to the ledger accounts.

The Ledger

ANALYZE → JOURNALIZE → **Post to ledger accounts** → TRIAL BALANCE → ADJUSTING ENTRIES → ADJUSTED TRIAL BALANCE → FINANCIAL STATEMENTS → CLOSING ENTRIES → POST-CLOSING TRIAL BALANCE

The entire group of accounts maintained by a company is the **ledger**.

- The ledger provides the balance in each of the accounts as well as keeps track of changes in these balances. For example, the Cash account shows the amount of cash available to meet current obligations, and the Accounts Payable account shows amounts owed to creditors.
- Companies may use various kinds of ledgers, but every company has a general ledger.
- A **general ledger** contains all the asset, liability, and stockholders' equity accounts, as shown in Illustration 2.9.

Whenever we use the term "ledger" in this text, we are referring to the general ledger unless we specify otherwise.

Asset Accounts	Liability Accounts	Stockholders' Equity Accounts
• Cash	• Notes Payable	• Service Revenue
• Accounts Receivable	• Accounts Payable	• Salaries and Wages Expense
• Supplies	• Salaries and Wages Payable	• Dividends
• Land	• Interest Payable	• Retained Earnings
• Equipment		• Common Stock

ILLUSTRATION 2.9 The General Ledger

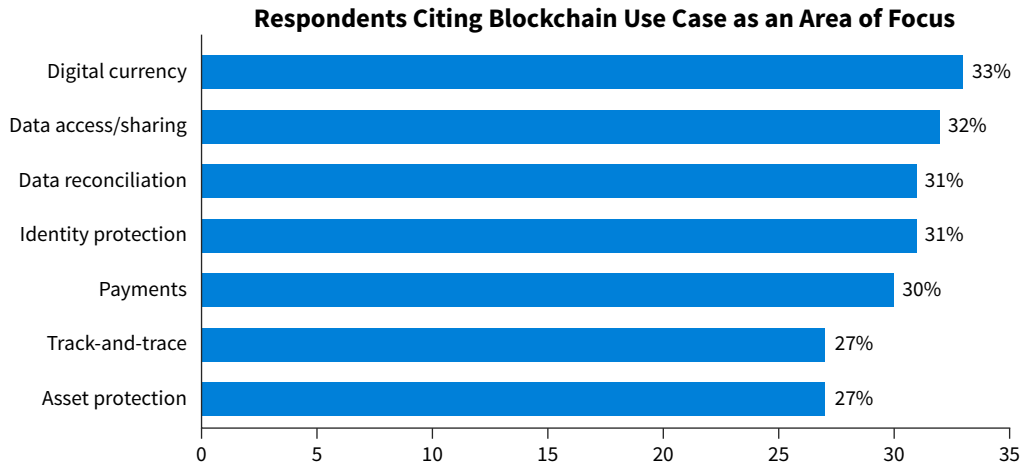
Companies arrange the ledger in the sequence in which they present the accounts in the financial statements, beginning with the balance sheet accounts. First in order are the asset accounts, followed by liability accounts, stockholders' equity accounts, revenues, and expenses. Each account is numbered for easier identification.

Accounting Matters

Working on the Chain Gang

You may have heard of blockchain, especially as it relates to digital currencies such as bitcoin, but what exactly is it? Blockchain is a decentralized, digital ledger of economic transactions that take place across a peer-to-peer network. A blockchain database contains two types of records: transactions and blocks. Blocks hold batches of transactions. The blocks are time-stamped and linked to a previous block. However, transactions cannot be altered retroactively.

As shown in the following chart, there are many use cases for blockchain within an organization, including digital currency, data reconciliation, and asset transfers. As companies adopt blockchain technology throughout their organization, financial reporting mechanisms must adapt to that change as well.



Source: Deloitte's 2020 Global Blockchain Survey.

What does this mean for the accounting profession and, more notably, the accounting system? The answer to that question remains to be seen, but the opportunities are endless. Enhanced security of transactions (reduced fraud), near real-time settlement of transactions between two parties (reduced risk), and an opportunity for accounting professionals to streamline financial reporting while paving the way for continuous audit processes are a few ways that blockchain could change the accounting profession. And while there is potential for disruption to the financial reporting process as we know it, many agree that blockchain represents an opportunity to evolve the accounting profession from record-keeper to advisor. What an exciting time to enter the profession!

Sources: Antoinette Alexander, "Blockchain: Unlocking New Potential," *Accounting Today* (December 3, 2019); and Deloitte's 2020 Global Blockchain Survey.

Chart of Accounts

The number and type of accounts differ for each company. The number of accounts depends on the amount of detail management desires. For example, the management of one company may want a single account for all types of utilities expense. Another may keep separate expense accounts for each type of utility, such as gas, electricity, and water. Similarly, a small company will have fewer accounts than a business giant like **Anheuser-Busch InBev**. Smaller companies may be able to manage and report its activities in 20 to 30 accounts, while Anheuser-Busch may require thousands of accounts to keep track of its worldwide activities.

- Most companies have a **chart of accounts**, which lists the accounts and the account numbers that identify their location in the ledger.
- The numbering system that identifies the accounts usually starts with the balance sheet accounts and follows with the income statement accounts.

We will be explaining the accounting for Pioneer Advertising, a service company. The ranges for Pioneer's account numbers are as follows.

- 101–199 indicate asset accounts.
- 200–299 indicate liability accounts.
- 300–399 indicate stockholders' equity accounts.
- 400–499 indicate revenues.
- 500–799 indicate expenses.
- 800–899 indicate other revenues.
- 900–999 indicate other expenses.

Illustration 2.10 shows the chart of accounts for Pioneer Advertising.

ILLUSTRATION 2.10 Chart of Accounts for Pioneer Advertising

Pioneer Advertising
Chart of Accounts

Assets	
101	Cash
112	Accounts Receivable
113	Allowance for Doubtful Accounts
126	Supplies
130	Prepaid Insurance
157	Equipment
158	Accumulated Depreciation—Equipment

Liabilities	
200	Notes Payable
201	Accounts Payable
209	Unearned Service Revenue
212	Salaries and Wages Payable
230	Interest Payable

Stockholders' Equity	
311	Common Stock
320	Retained Earnings
332	Dividends
350	Income Summary

Revenues	
400	Service Revenue

Expenses	
631	Supplies Expense
711	Depreciation Expense
722	Insurance Expense
726	Salaries and Wages Expense
729	Rent Expense
732	Utilities Expenses
750	Bad Debt Expense
905	Interest Expense

You will notice that there are gaps in the numbering system of the chart of accounts. Gaps are left to permit the insertion of new accounts as needed during the life of the business.

The Recording Process Illustrated

Illustrations 2.11 through 2.20 show the basic steps in the recording process using the October transactions of Pioneer Advertising. Pioneer's accounting period is one month. A basic analysis and a debit-credit analysis precede the journalizing and posting of each transaction. For simplicity, we use the T-account form of the ledger in the illustrations.

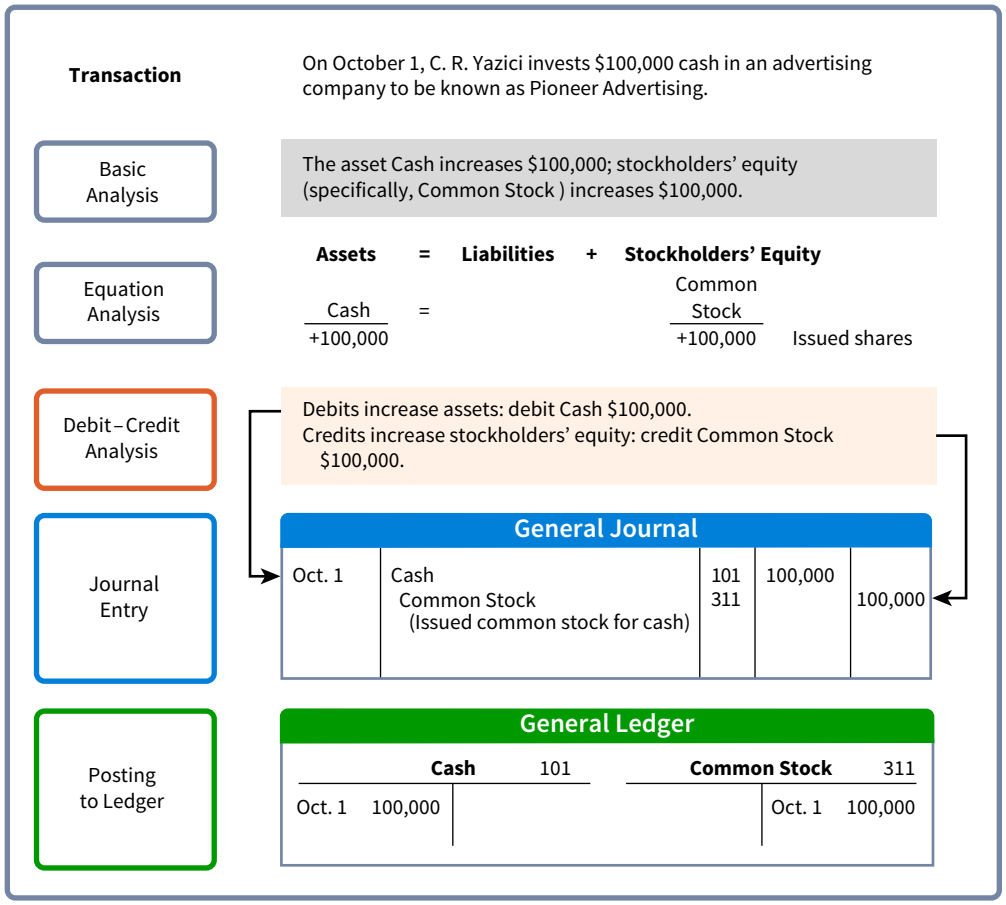

Transaction
On October 1, C. R. Yazici invests $100,000 cash in an advertising company to be known as Pioneer Advertising.
Basic Analysis
The asset Cash increases $100,000; stockholders' equity (specifically, Common Stock) increases $100,000.
Equation Analysis
Assets = Liabilities + Stockholders' Equity
Cash +100,000 = Common Stock +100,000 Issued shares
Debit–Credit Analysis
Debits increase assets: debit Cash $100,000.
Credits increase stockholders' equity: credit Common Stock $100,000.
Journal Entry
General Journal
Oct. 1 Cash 101 100,000
Common Stock 311 100,000
(Issued common stock for cash)
Posting to Ledger
General Ledger
Cash 101
Oct. 1 100,000
Common Stock 311
Oct. 1 100,000

ILLUSTRATION 2.11 Investment of Cash by Stockholders

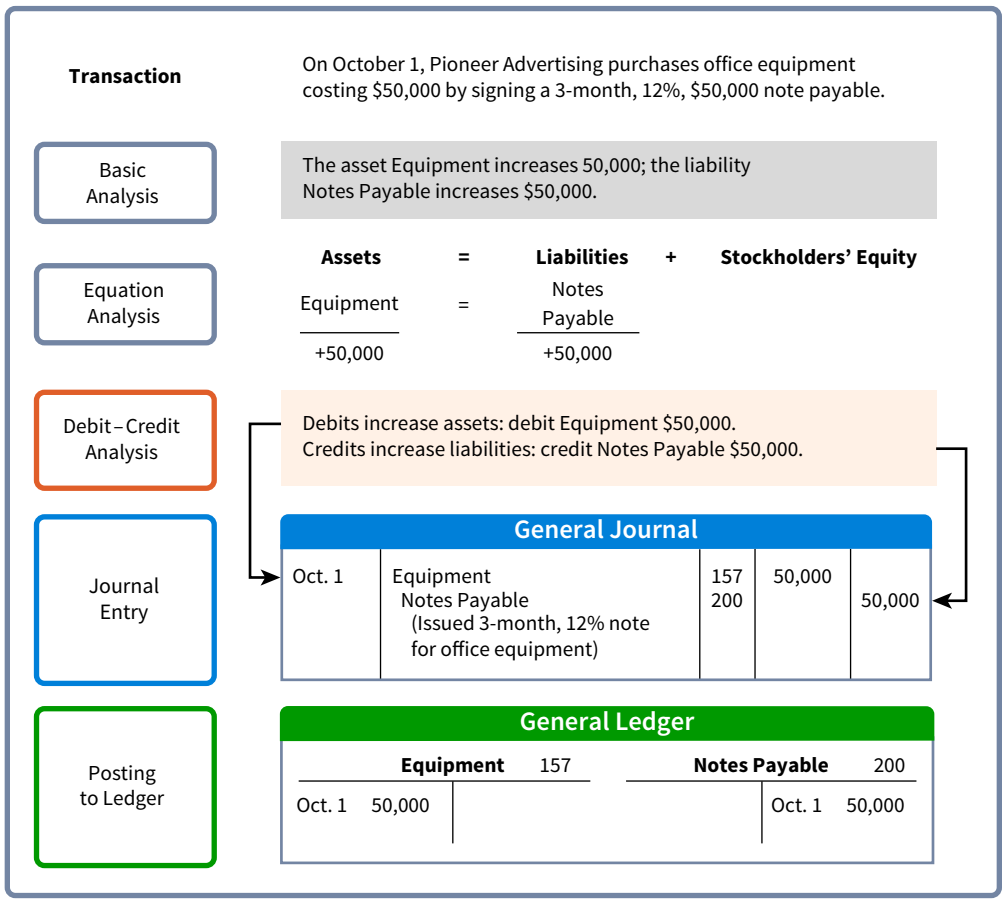

Transaction
On October 1, Pioneer Advertising purchases office equipment costing $50,000 by signing a 3-month, 12%, $50,000 note payable.
Basic Analysis
The asset Equipment increases 50,000; the liability Notes Payable increases $50,000.
Equation Analysis
Assets = Liabilities + Stockholders' Equity
Equipment +50,000 = Notes Payable +50,000
Debit–Credit Analysis
Debits increase assets: debit Equipment $50,000.
Credits increase liabilities: credit Notes Payable $50,000.
Journal Entry
General Journal
Oct. 1 Equipment 157 50,000
Notes Payable 200 50,000
(Issued 3-month, 12% note for office equipment)
Posting to Ledger
General Ledger
Equipment 157
Oct. 1 50,000
Notes Payable 200
Oct. 1 50,000

ILLUSTRATION 2.12
Purchase of Office Equipment

ILLUSTRATION 2.13
Receipt of Cash for Future Service

Transaction

On October 2, Pioneer Advertising receives a $12,000 cash advance from R. Knox, a client, for advertising services that are expected to be completed by December 31.

Basic Analysis

The asset Cash increases $12,000; the liability Unearned Service Revenue increases $12,000 because the service has not been performed yet. That is, when Pioneer receives an advance payment, it should record an unearned revenue (a liability) in order to recognize the obligation that exists.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity
Cash	=	Unearned Service Revenue		
+12,000		+12,000		

Debit–Credit Analysis

Debits increase assets: debit Cash $12,000.
Credits increase liabilities: credit Unearned Service Revenue $12,000.

Journal Entry

General Journal

Oct. 2	Cash	101	12,000	
	Unearned Service Revenue	209		12,000
	(Received cash from R. Knox for future service)			

Posting to Ledger

General Ledger

Cash 101				Unearned Service Revenue 209			
Oct. 1	100,000					Oct. 2	12,000
2	12,000						

ILLUSTRATION 2.14
Payment of Monthly Rent

Transaction

On October 3, Pioneer Advertising pays office rent for October in cash, $9,000.

Basic Analysis

Rent Expense increases $9,000 because the payment pertains only to the current month; the asset Cash decreases $9,000.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity	
Cash	=			Expenses	
–9,000				–9,000	Rent Expense

Debit–Credit Analysis

Debits increase expenses: debit Rent Expense $9,000.
Credits decrease assets: credit Cash $9,000.

Journal Entry

General Journal

Oct. 3	Rent Expense	729	9,000	
	Cash	101		9,000
	(Paid cash for October rent)			

Posting to Ledger

General Ledger

Cash 101				Rent Expense 729			
Oct. 1	100,000	Oct. 3	9,000	Oct. 3	9,000		
2	12,000						

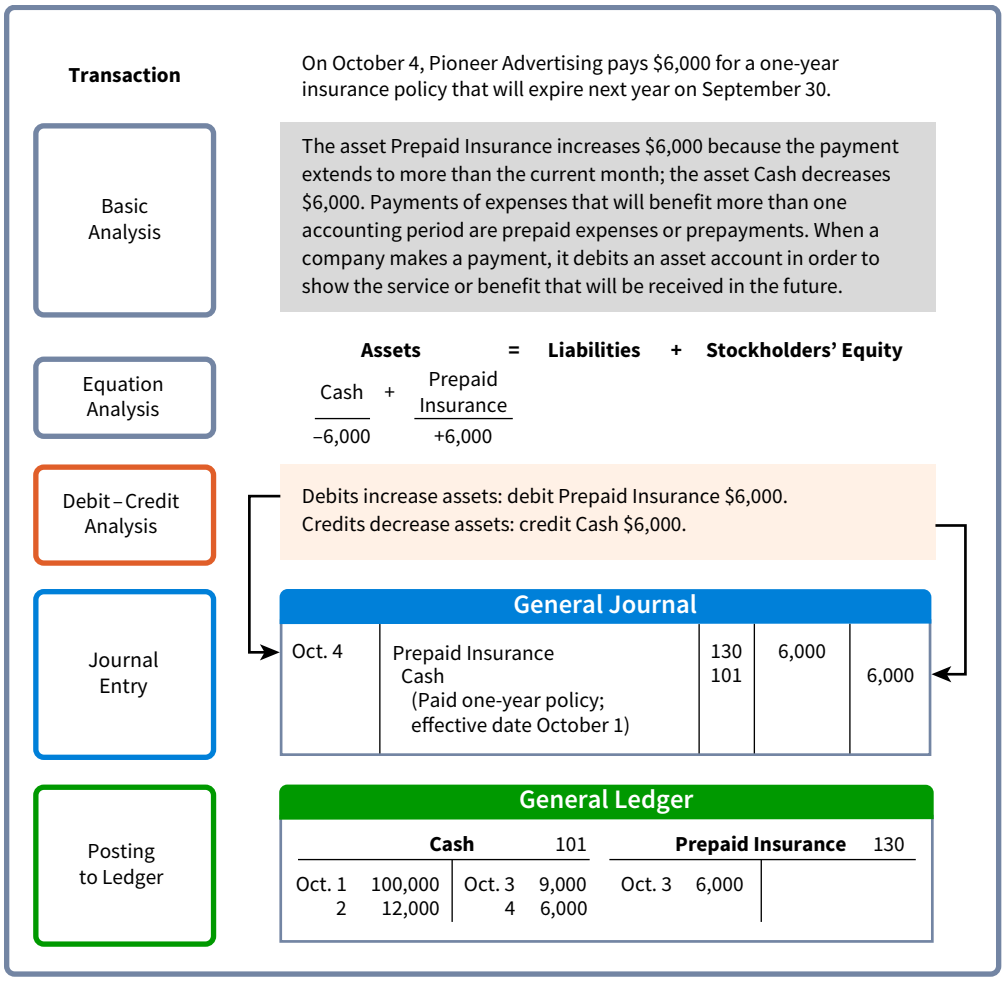

Transaction
On October 4, Pioneer Advertising pays $6,000 for a one-year insurance policy that will expire next year on September 30.
Basic Analysis
The asset Prepaid Insurance increases $6,000 because the payment extends to more than the current month; the asset Cash decreases $6,000. Payments of expenses that will benefit more than one accounting period are prepaid expenses or prepayments. When a company makes a payment, it debits an asset account in order to show the service or benefit that will be received in the future.
Equation Analysis
Assets = Liabilities + Stockholders' Equity
Cash + Prepaid Insurance
–6,000 +6,000
Debit–Credit Analysis
Debits increase assets: debit Prepaid Insurance $6,000.
Credits decrease assets: credit Cash $6,000.
Journal Entry
General Journal
Oct. 4 Prepaid Insurance 130 6,000
Cash 101 6,000
(Paid one-year policy; effective date October 1)
Posting to Ledger
General Ledger
Cash 101
Oct. 1 100,000
2 12,000
Oct. 3 9,000
4 6,000
Prepaid Insurance 130
Oct. 3 6,000

ILLUSTRATION 2.15 Payment for Insurance

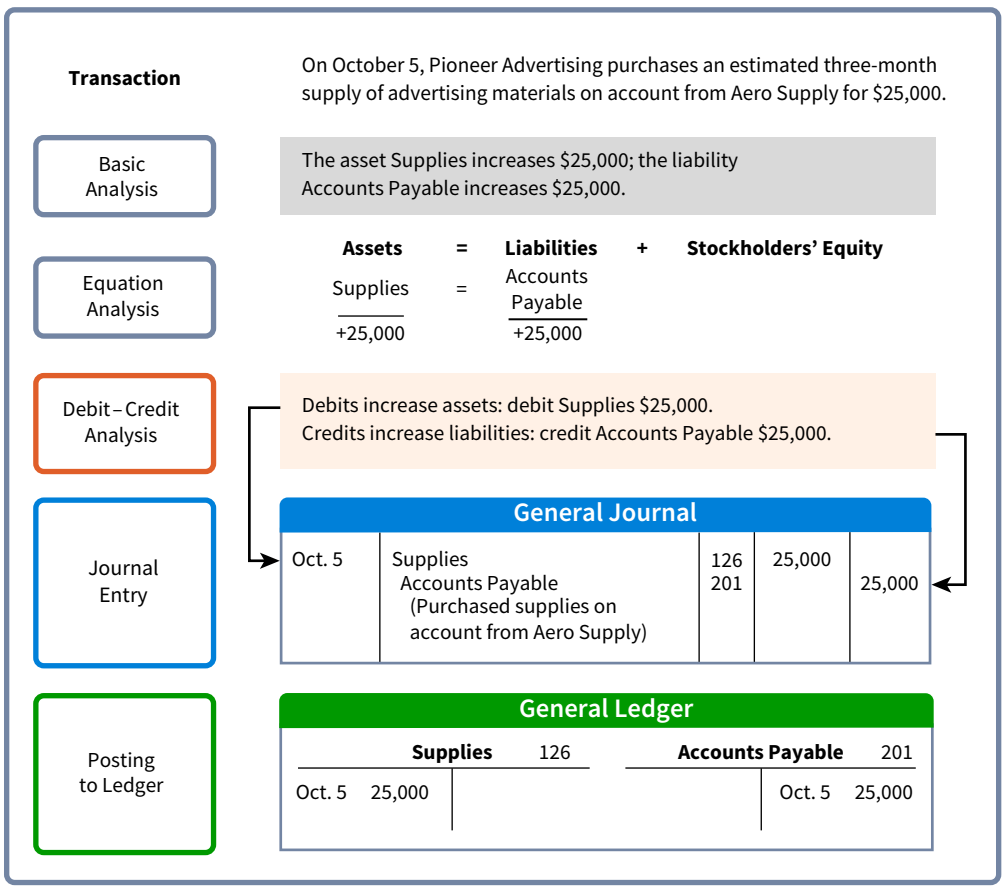

Transaction
On October 5, Pioneer Advertising purchases an estimated three-month supply of advertising materials on account from Aero Supply for $25,000.
Basic Analysis
The asset Supplies increases $25,000; the liability Accounts Payable increases $25,000.
Equation Analysis
Assets = Liabilities + Stockholders' Equity
Supplies = Accounts Payable
+25,000 +25,000
Debit–Credit Analysis
Debits increase assets: debit Supplies $25,000.
Credits increase liabilities: credit Accounts Payable $25,000.
Journal Entry
General Journal
Oct. 5 Supplies 126 25,000
Accounts Payable 201 25,000
(Purchased supplies on account from Aero Supply)
Posting to Ledger
General Ledger
Supplies 126
Oct. 5 25,000
Accounts Payable 201
Oct. 5 25,000

ILLUSTRATION 2.16 Purchase of Supplies on Credit

ILLUSTRATION 2.17 Signing a Contract

Event	On October 9, Pioneer Advertising signs a contract with a local newspaper for advertising inserts (flyers) to be distributed starting the last Sunday in November. Pioneer will start work on the content of the flyers in November. Payment of $7,000 is due following delivery of the Sunday papers containing the flyers.
Basic Analysis	A business transaction has not occurred. There is only an agreement between Pioneer Advertising and the newspaper for the services to be provided in November. Therefore, no journal entry is necessary in October.

ILLUSTRATION 2.18 Payment of Salaries

Transaction	On October 26, Pioneer Advertising pays employee salaries and wages in cash. Employees are paid once a month, every four weeks. The total payroll is $ 10,000 per week, or $2,000 per day. In October, the pay period began on Monday, October 1. As a result, the pay period ended on Friday, October 26, with salaries and wages of $40,000 being paid.
Basic Analysis	Salaries and Wages Expense increases $40,000; the asset Cash decreases $40,000.
Equation Analysis	**Assets** = **Liabilities** + **Stockholders' Equity** Cash = Expenses –40,000 = –40,000 Salaries and Wages Expense
Debit–Credit Analysis	Debits increase expenses: debit Salaries and Wages Expense $40,000. Credits decrease assets: credit Cash $40,000.

Journal Entry

General Journal

Oct. 26	Salaries and Wages Expense	726	40,000	
	Cash	101		40,000
	(Paid salaries to date)			

Posting to Ledger

General Ledger

Cash 101

Oct. 1	100,000	Oct. 3	9,000		
2	12,000	4	6,000		
		26	40,000		

Salaries and Wages Expense 726

Oct. 26	40,000		

Transaction

On October 31, Pioneer Advertising receives $28,000 in cash and bills Copa Company $72,000 for advertising services of $100,000 performed in October.

Basic Analysis

The asset Cash increases $28,000; the asset Accounts Receivable increases $72,000; the revenue account Service Revenue increases $100,000.

Equation Analysis

Assets			=	Liabilities	+	Stockholders' Equity
Cash	+	Accounts Receivable	=			Revenues
+28,000		+72,000				+100,000 Service Revenue

Debit–Credit Analysis

Debits increase assets: debit Cash $28,000 and Accounts Receivable $72,000.
Credits increase revenues: credit Service Revenue $100,000.

Journal Entry

General Journal

Oct. 31	Cash	101	28,000	
	Accounts Receivable	112	72,000	
	Service Revenue	400		100,000
	(Recognize revenue for services performed)			

Posting to Ledger

General Ledger

Cash 101

Oct. 1	100,000	Oct. 3	9,000
2	12,000	4	6,000
31	28,000	26	40,000
		31	5,000

Accounts Receivable 112

Oct. 31	72,000

Service Revenue 400

Oct. 31	100,000

ILLUSTRATION 2.19 Receipt of Cash for Services Provided

Transaction

On October 31, Pioneer Advertising's board of directors declares and pays a $5,000 cash dividend to stockholders.

Basic Analysis

The Dividends account increases $5,000; the asset Cash decreases $5,000.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity
Cash				Dividends
–5,000				–5,000

Debit–Credit Analysis

Debits increase dividends: debit Dividends $5,000.
Credits decrease assets: credit Cash $5,000.

Journal Entry

General Journal

Oct. 31	Dividends	332	5,000	
	Cash	101		5,000
	(Declared and paid a cash dividend)			

Posting to Ledger

General Ledger

Cash 101

Oct. 1	100,000	Oct. 3	9,000
2	12,000	4	6,000
31	28,000	26	40,000
		31	5,000

Dividends 332

Oct. 31	5,000

ILLUSTRATION 2.20 Declaration and Payment of Dividend

Study these transaction analyses carefully. **The purpose of transaction analysis is first to identify the type of account involved, and then to determine whether to make a debit or a credit to the account.** You should always perform this type of analysis before preparing a journal entry. Doing so will help you understand the journal entries discussed in this chapter as well as more complex journal entries in later chapters.

Summary Illustration of Journalizing and Posting

Illustration 2.21 shows the journal for Pioneer Advertising for October.

ILLUSTRATION 2.21 General Journal Entries

General Journal				Page J1
Date	**Account Titles and Explanation**	**Ref.**	**Debit**	**Credit**
2025				
Oct. 1	Cash	101	100,000	
	Common Stock	311		100,000
	(Issued common stock for cash)			
1	Equipment	157	50,000	
	Notes Payable	200		50,000
	(Issued 3-month,12% note for office equipment)			
2	Cash	101	12,000	
	Unearned Service Revenue	209		12,000
	(Received cash from R. Knox for future services)			
3	Rent Expense	729	9,000	
	Cash	101		9,000
	(Paid cash for October rent)			
4	Prepaid Insurance	130	6,000	
	Cash	101		6,000
	(Paid one-year policy; effective date October 1)			
5	Supplies	126	25,000	
	Accounts Payable	201		25,000
	(Purchased supplies on account from Aero Supply)			
26	Salaries and Wages Expense	726	40,000	
	Cash	101		40,000
	(Paid salaries to date)			
31	Cash	101	28,000	
	Accounts Receivable	112	72,000	
	Service Revenue	400		100,000
	(Recognized revenue for services performed)			
	Dividends	332	5,000	
	Cash	101		5,000
	(Declared and paid a cash dividend)			

Illustration 2.22 shows the ledger, with all balances in red.

ILLUSTRATION 2.22 General Ledger

General Ledger

Cash — No. 101

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 1		J1	100,000		100,000
2		J1	12,000		112,000
3		J1		9,000	103,000
4		J1		6,000	97,000
26		J1		40,000	57,000
31		J1	28,000		85,000
31		J1		5,000	**80,000**

Accounts Receivable — No. 112

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 31		J1	72,000		**72,000**

Supplies — No. 126

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 5		J1	25,000		**25,000**

Prepaid Insurance — No. 130

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 4		J1	6,000		**6,000**

Equipment — No. 157

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 1		J1	50,000		**50,000**

Notes Payable — No. 200

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 1		J1		50,000	**50,000**

Accounts Payable — No. 201

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 5		J1		25,000	**25,000**

Unearned Service Revenue — No. 209

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 2		J1		12,000	**12,000**

Common Stock — No. 311

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 1		J1		100,000	**100,000**

Dividends — No. 332

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 31		J1	5,000		**5,000**

Service Revenue — No. 400

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 31		J1		100,000	**100,000**

Salaries and Wages Expense — No. 726

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 26		J1	40,000		**40,000**

Rent Expense — No. 729

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 3		J1	9,000		**9,000**

The general ledger allows Pioneer Advertising to quickly see all of the entries made to each account during the month. This overview is helpful when analyzing accounts for trends or trying to spot potential errors.

- If management would like to further explore one of the transactions impacting an account, they can use the "Ref." number to navigate into the appropriate journal where the entry was originally recorded.
- The journal entry will provide even more details, such as the source document that prompted the entry, or who initiated and recorded the entry.

This is all useful information when analyzing a company's transactions.

Analytics in Action: This System Is Full of Data

Accounting systems house vast amounts of data that can be used to make business decisions. The real trick, however, is accessing and "cleaning"' the data to most effectively use it for decision-making. Imagine conducting a revenue analysis for a pharmaceutical company like **Pfizer Inc**. We could easily pull total revenues from its trial balance, but what does that tell us? Not much.

To fully analyze revenue trends, we might look at revenue by product type or geographic location, or perform a yearly trend

analysis of each product. As a result, we would need to pull very detailed, transactional, revenue data from Pfizer's accounting system and then use tools like Excel, Tableau, or Power BI to organize the data for decision-making.

The ability to drill into such detailed revenue data allows Pfizer to explain revenue changes to its investors and highlight changes due to unique events like the Covid-19 pandemic, versus changes due to regulatory or economic events that may be more ongoing in nature. The data contained in a company's accounting system, combined with analytical software, is an increasingly powerful tool for business decision-makers.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Trial Balance

ANALYZE → JOURNALIZE → POST → **Prepare a trial balance** → ADJUSTING ENTRIES → ADJUSTED TRIAL BALANCE → FINANCIAL STATEMENTS → CLOSING ENTRIES → POST-CLOSING TRIAL BALANCE

A **trial balance** is a list of accounts and their balances at a given time.

- A company usually prepares a trial balance at the end of an accounting period such as the end of the month.
- The trial balance lists the accounts in the order in which they appear in the ledger, with debit balances listed in the left column and credit balances in the right column. The totals of the two columns must agree.

The trial balance proves the mathematical equality of debits and credits after posting to the ledger. Under the double-entry system, this equality occurs when the sum of the debit account balances equals the sum of the credit account balances. A trial balance also uncovers errors in journalizing and posting. In addition, it is useful in the preparation of financial statements. The procedures for preparing a trial balance consist of:

1. Listing the account titles and their balances.
2. Totaling the debit and credit columns.
3. Proving the equality of the two columns.

Illustration 2.23 presents the trial balance prepared from the ledger of Pioneer Advertising. Note that the total debits ($287,000) equal the total credits ($287,000). A trial balance also may show account numbers to the left of the account titles.

ILLUSTRATION 2.23 Trial Balance (Unadjusted)

Pioneer Advertising
Trial Balance
October 31, 2025

	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	72,000	
Supplies	25,000	
Prepaid Insurance	6,000	
Equipment	50,000	
Notes Payable		$ 50,000
Accounts Payable		25,000
Unearned Service Revenue		12,000
Common Stock		100,000
Dividends	5,000	
Service Revenue		100,000
Salaries and Wages Expense	40,000	
Rent Expense	9,000	
	$287,000	$287,000

A trial balance does not prove that a company recorded all transactions or that the ledger is correct. Numerous errors may exist even though the trial balance columns agree. For example, the trial balance may balance even when a company:

1. Fails to journalize a transaction,
2. Omits posting a correct journal entry,
3. Posts a journal entry twice,
4. Uses incorrect accounts in journalizing or posting, or
5. Makes offsetting errors in recording the amount of a transaction.

In other words, as long as a company posts equal debits and credits, even to the wrong account or in the wrong amount, the total debits will equal the total credits.

Put It into Practice LO 2.2

Journalize, Post, and Prepare a Trial Balance

FACTS Mike Greenberg opened Kleene Window Washing Inc. on July 1, 2025. During July, the following transactions occurred.

July 1 Issued 12,000 shares of common stock for $12,000 cash.
1 Purchased used truck for $8,000, paying $2,000 cash and the balance on account.
3 Purchased cleaning supplies for $900 on account.
5 Paid $1,800 cash on a 1-year insurance policy effective July 1.
12 Billed customers $3,700 for cleaning services performed.
18 Paid $1,000 cash on amount owed on truck and $500 on amount owed on cleaning supplies.
20 Paid $2,000 cash for employee salaries.
21 Collected $1,600 cash from customers billed on July 12.
25 Billed customers $2,500 for cleaning services performed.
31 Paid $290 for maintenance of the truck during month.
31 Declared and paid $600 cash dividend.

The chart of accounts for Kleene Window Washing contains the following accounts: Cash, Accounts Receivable, Supplies, Prepaid Insurance, Equipment, Accounts Payable, Salaries and Wages Payable, Common Stock, Retained Earnings, Dividends, Income Summary, Service Revenue, Maintenance and Repairs Expense, Supplies Expense, Depreciation Expense, Insurance Expense, and Salaries and Wages Expense.

INSTRUCTIONS

a. Journalize the July transactions.
b. Post to the ledger accounts. (Use T-accounts.)
c. Prepare a trial balance at July 31.

SOLUTION

a.

General Journal

Date	Account Titles	Debit	Credit
July 1	Cash	12,000	
	Common Stock		12,000
1	Equipment	8,000	
	Accounts Payable		6,000
	Cash		2,000
3	Supplies	900	
	Accounts Payable		900

General Journal

Date	Account Titles	Debit	Credit
5	Prepaid Insurance	1,800	
	Cash		1,800
12	Accounts Receivable	3,700	
	Service Revenue		3,700
18	Accounts Payable	1,500	
	Cash		1,500
20	Salaries and Wages Expense	2,000	
	Cash		2,000
21	Cash	1,600	
	Accounts Receivable		1,600
25	Accounts Receivable	2,500	
	Service Revenue		2,500
31	Maintenance and Repairs Expense	290	
	Cash		290
31	Dividends	600	
	Cash		600

b.

Cash

7/1	12,000	7/1	2,000
7/21	1,600	7/5	1,800
		7/18	1,500
		7/20	2,000
		7/31	290
		7/31	600
7/31 Bal.	5,410		

Equipment

7/1	8,000		
7/31 Bal.	8,000		

Accounts Payable

7/18	1,500	7/1	6,000
		7/3	900
		7/31 Bal.	5,400

Accounts Receivable

7/12	3,700	7/21	1,600
7/25	2,500		
7/31 Bal.	4,600		

Common Stock

		7/1	12,000
		7/31 Bal.	12,000

Supplies

7/3	900		
7/31 Bal.	900		

Dividends

7/31	600		
7/31 Bal.	600		

Prepaid Insurance

7/5	1,800		
7/31 Bal.	1,800		

Service Revenue

		7/12	3,700
		7/25	2,500
		7/31 Bal.	6,200

Maintenance and Repairs Expense

7/31	290		
7/31 Bal.	290		

Salaries and Wages Expense

7/20	2,000		
7/31 Bal.	2,000		

c.

Kleene Window Washing Inc.
Trial Balance
July 31, 2025

	Before Adjustment	
	Debit	**Credit**
Cash	$ 5,410	
Accounts Receivable	4,600	
Supplies	900	
Prepaid Insurance	1,800	
Equipment	8,000	
Accounts Payable		$ 5,400
Salaries and Wages Payable		
Common Stock		12,000
Dividends	600	
Service Revenue		6,200
Maintenance and Repairs Expense	290	
Supplies Expense		
Depreciation Expense		
Insurance Expense		
Salaries and Wages Expense	2,000	
	$23,600	$23,600

2.3 Adjusting Entries

LEARNING OBJECTIVE 3

Identify and prepare adjusting entries.

ANALYZE → JOURNALIZE → POST → TRIAL BALANCE → **Journalize and post adjusting entries: deferrals/accruals** → ADJUSTED TRIAL BALANCE → FINANCIAL STATEMENTS → CLOSING ENTRIES → POST-CLOSING TRIAL BALANCE

In order for revenues to be recorded in the period in which services are performed (performance obligations are satisfied) and for expenses to be recognized in the period in which they are incurred, companies make **adjusting entries**. In short, adjusting entries ensure that a company follows the revenue recognition and expense recognition principles.

The use of adjusting entries makes it possible to report on the balance sheet the appropriate assets, liabilities, and stockholders' equity at the statement date. Adjusting entries also make it possible to report on the income statement the proper revenues and expenses for the period. Why are adjusting entries needed? Because the initial trial balance may not contain up-to-date and complete data. This occurs for the following reasons.

1. Some events are not recorded daily because it is not efficient to do so. Examples are the use of supplies and the earning of salaries and wages by employees.

2. Some costs are not recorded during the accounting period because these costs expire with the passage of time rather than as a result of recurring daily transactions. Examples of such costs are building and equipment depreciation, rent, and insurance.
3. Some items may be unrecorded. An example is a utility service bill that will not be received until the next accounting period.

Adjusting entries are required every time a company, such as **Coca-Cola**, prepares financial statements. At that time, Coca-Cola must analyze each account in the trial balance to determine whether it is complete and up-to-date for financial statement purposes. The analysis requires a thorough understanding of Coca-Cola's operations and the interrelationship of accounts.

Because of this involved process, usually a skilled accountant prepares the adjusting entries. In gathering the adjustment data, Coca-Cola employees may need to make inventory counts of supplies and repair parts. Further, Coca-Cola accountants may prepare supporting schedules of insurance policies, rental agreements, and other contractual commitments.

Companies often prepare adjustments after the balance sheet date. However, they date the entries as of the balance sheet date.

Types of Adjusting Entries

Adjusting entries are classified as either deferrals or accruals. Each of these classes has two subcategories, as Illustration 2.24 shows.

ILLUSTRATION 2.24 Categories of Adjusting Entries

Deferrals:
1. **Prepaid expenses:** Expenses paid in cash before they are used or consumed.
2. **Unearned revenues:** Cash received before services are performed.

Accruals:
1. **Accrued revenues:** Revenues for services performed but not yet received in cash or recorded.
2. **Accrued expenses:** Expenses incurred but not yet paid in cash or recorded.

We review specific examples and explanations of each type of adjustment in the following sections. Each example is based on the October 31 trial balance of Pioneer Advertising (Illustration 2.23). We assume that Pioneer uses an accounting period of one month. Thus, Pioneer will make monthly adjusting entries, dated October 31.

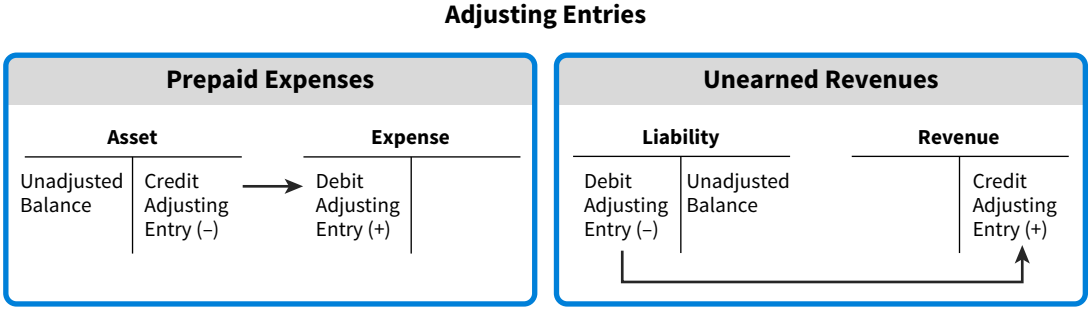
Adjusting Entries for Deferrals

To defer means to postpone or delay. **Deferrals** are expenses or revenues that are recognized at a date later than the point when cash was originally exchanged. The two types of deferrals are prepaid expenses and unearned revenues.

If a company does not make an adjustment for these deferrals, the asset and liability are overstated, and the related expense and revenue are understated. For example, in Pioneer Advertising's trial balance (Illustration 2.23), the balance in the asset Supplies shows only supplies purchased. If Pioneer used some of these supplies during the period, the Supplies account balance is overstated; the related expense account, Supplies Expense, is understated because the cost of supplies used has not been recognized. Thus, the adjusting entry for deferrals will decrease a balance sheet account and increase an income statement account.

Illustration 2.25 shows the effects of adjusting entries for deferrals.

ILLUSTRATION 2.25 Adjusting Entries for Deferrals



Prepaid Expenses

Assets paid for and recorded before a company uses them are called **prepaid expenses**. When expenses are prepaid, a company debits an asset account to show the service or benefit it will receive in the future. Examples of common prepayments are insurance, supplies, advertising, and rent. In addition, companies make prepayments when they purchase buildings and equipment.

- Prepaid expenses are costs that expire either with the passage of time (e.g., rent and insurance) or through use and consumption (e.g., supplies).
- The expiration of these costs does not require daily entries, an unnecessary and impractical task.

Accordingly, a company like **Home Depot** usually postpones the recognition of such cost expirations until it prepares financial statements. At each statement date, Home Depot makes adjusting entries to record the expenses that apply to the current accounting period and to show the remaining amounts in the asset accounts.

As shown above, prior to adjustment, assets are overstated and expenses are understated. **Thus, an adjusting entry for prepaid expenses results in a debit to an expense account and a credit to an asset account.**

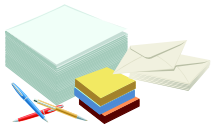
Supplies A business may use several different types of supplies. For example, a CPA firm will use office supplies such as stationery, envelopes, and accounting paper. An advertising firm will stock advertising supplies such as whiteboard markers and printer cartridges.

- Supplies are generally debited to an asset account when they are acquired.
- Recognition of supplies used is generally deferred until the adjustment process.
- At that time, a physical inventory (count) of supplies is taken. The difference between the balance in the Supplies (asset) account and the cost of supplies on hand represents the supplies used (an expense) for the period.

For example, Pioneer Advertising purchased advertising supplies costing $25,000 on October 5. Pioneer therefore debited the asset Supplies. This account shows a balance of $25,000 in the October 31 trial balance (see Illustration 2.23). Do you think there are still $25,000 of supplies on October 31? An inventory count at the close of business on October 31 reveals that only $10,000 of supplies are still on hand. As a result, the cost of supplies used is $15,000 ($25,000 − $10,000). The amount used is recorded as an expense. The analysis and adjustment for advertising supplies is summarized in **Illustration 2.26**.

Supplies

Oct. 5



Supplies purchased; record asset

Oct. 31

Supplies used; record supplies expense

ILLUSTRATION 2.26 Adjustment for Supplies

Basic Analysis

The expense Supplies Expense is increased $15,000, and the asset Supplies is decreased $15,000.

Equation Analysis

(1)

Assets	=	Liabilities	+	Stockholders' Equity
Supplies				Supplies Expense
−15,000	=			−15,000

Debit–Credit Analysis

Debits increase expenses: debit Supplies Expense $15,000.
Credits decrease assets: credit Supplies $15,000.

Journal Entry

General Journal

Oct. 31	Supplies Expense	631	15,000	
	Supplies	126		15,000
	(To record supplies used)			

Posting to Ledger

General Ledger

Supplies					126
Oct. 5		25,000	Oct. 31	Adj.	15,000
Oct.31	Bal.	10,000			

Supplies Expense					631
Oct. 31	Adj.	15,000			
Oct. 31	Bal.	15,000			

A	=	L	+	SE
				−15,000
−15,000				

Cash Flows
no effect

After adjustment, the asset account Supplies shows a balance of $10,000, which equals the cost of supplies on hand at the statement date. In addition, Supplies Expense shows a balance of $15,000, which equals the cost of supplies used in October. If an adjusting entry is not made, then:

- October expenses are understated and net income is overstated by $15,000.
- Both assets and stockholders' equity are overstated by $15,000 on the October 31 balance sheet.

Insurance Most companies maintain fire and theft insurance on merchandise and equipment, personal liability insurance for accidents suffered by customers, and automobile insurance on company cars and trucks. The extent of protection against loss determines the cost of the insurance (the amount of the premium to be paid). The insurance policy specifies the term and coverage. The minimum term usually covers one year, but three- to five-year terms are available and may offer lower annual premiums.

- A company usually debits insurance premiums to the asset account Prepaid Insurance when paid.
- At the financial statement date, the company then debits Insurance Expense and credits Prepaid Insurance for the amount of the insurance cost that expired during the period.

For example, on October 4, Pioneer Advertising paid $6,000 for a one-year fire insurance policy. Coverage began on October 1. Pioneer debited the cost of the premium to Prepaid Insurance at that time. This account still shows a balance of $6,000 in the October 31 trial balance. Does Pioneer still have one year of insurance coverage? No, because the month of October has ended. One month, or $500, of the insurance policy has expired or been used. The analysis and adjustment for insurance is summarized in Illustration 2.27.

Insurance

Oct. 1

Insurance purchased; record asset

Oct. 31

Insurance policy

Oct $500	Nov $500	Dec $500	Jan $500
Feb $500	March $500	April $500	May $500
June $500	July $500	Aug $500	Sept $500

Insurance = $6,000/year

Insurance expired; record insurance expense

ILLUSTRATION 2.27
Adjustment for Insurance

Basic Analysis
The expense Insurance Expense is increased $500, and the asset Prepaid Insurance is decreased $500.

Equation Analysis

	Assets	=	Liabilities	+	Stockholders' Equity
(1)	Prepaid Insurance −500	=			Insurance Expense −500

Debit–Credit Analysis
Debits increase expenses: debit Insurance Expense $500.
Credits decrease assets: credit Prepaid Insurance $500.

Journal Entry

General Journal

Oct. 31	Insurance Expense	722	500	
	Prepaid Insurance	130		500
	(To record insurance expired)			

Posting to Ledger

General Ledger

Prepaid Insurance 130				Insurance Expense 722			
Oct. 4	6,000	Oct. 31	Adj. 500	Oct. 31	Adj. 500		
Oct.31 Bal.	5,500			Oct. 31	Bal. 500		

A	=	L	+	SE
				−500
−500				

Cash Flows
no effect

The asset Prepaid Insurance shows a balance of $5,500, which represents the unexpired cost for the remaining 11 months of coverage. At the same time, the balance in Insurance Expense equals the insurance cost that expired in October. Without an adjusting entry:

- October expenses are understated by $500 and net income is overstated by $500.
- Both assets and stockholders' equity also are overstated by $500 on the October 31 balance sheet.

Depreciation A company like **Caterpillar** typically owns various productive assets, such as buildings, equipment, and motor vehicles. These assets provide a service for a number of years. The term of service is commonly referred to as the **useful life** of the asset. Because Caterpillar expects an asset such as a building to provide service for many years, Caterpillar records the building as an asset at its cost, as required by the historical cost principle.

Under GAAP, the acquisition of long-lived assets is essentially a prepayment for services that are provided by those assets over their useful life. **Depreciation** is the process of expensing (allocating) the cost of an asset over its useful life in a rational and systematic manner. In other words, to follow the expense recognition principle, Caterpillar reports a portion of the cost of a long-lived asset as an expense during each period of the asset's useful life.

Depreciation Adjustment Generally accepted accounting principles (GAAP) view the acquisition of productive facilities as a long-term prepayment for services. The need for making periodic adjusting entries for depreciation is the same as we described for other prepaid expenses.

- A company recognizes the expired cost (expense) during the period and reports the unexpired cost (asset) at the end of the period.
- The primary causes of depreciation of a productive facility are actual use, deterioration due to the elements, and obsolescence.

For example, at the time Caterpillar acquires an asset, the effects of these factors cannot be known with certainty. Therefore, Caterpillar must estimate them. **Thus, depreciation is an estimate rather than a factual measurement of the expired cost.**

To estimate depreciation expense, Caterpillar often divides the cost of the asset by its useful life. For example, if Caterpillar purchases equipment for $10,000 and expects its useful life to be 10 years, Caterpillar records annual depreciation of $1,000.

In the case of Pioneer Advertising, it estimates depreciation on its office equipment to be $4,800 a year (cost $50,000 less salvage value $2,000 divided by useful life of 10 years), or $400 per month. The analysis and adjustment for depreciation is summarized in **Illustration 2.28**.

Depreciation

Oct. 1

Equipment purchased; record asset

Oct. 31

Equipment

Oct $400	Nov $400	Dec $400	Jan $400
Feb $400	March $400	April $400	May $400
June $400	July $400	Aug $400	Sept $400

Depreciation = $4,800/year

Depreciation recognized; record depreciation expense

ILLUSTRATION 2.28 Adjustment for Depreciation

Basic Analysis

The expense Depreciation Expense is increased $400, and the Accumulated Depreciation account is increased $400.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity
Accumulated Depreciation—Equipment				Depreciation Expense
−400	=			−400

Debit–Credit Analysis

Debits increase expenses: debit Depreciation Expense $400.
Credits increase contra assets: credit Accumulated Depreciation—Equipment $400.

Journal Entry

General Journal

Oct. 31	Depreciation Expense	711	400	
	Accumulated Depreciation—Equipment	158		400
	(To record monthly depreciation)			

Posting to Ledger

General Ledger

Equipment 157

Oct. 1	50,000		
Oct. 31 Bal.	50,000		

Accumulated Depreciation—Equipment 158

	Oct. 31	Adj.	400
	Oct. 31	Bal.	400

Depreciation Expense 711

Oct. 31	Adj.	400	
Oct. 31	Bal.	400	

A	=	L	+	SE
				−400

−400

Cash Flows
no effect

The balance in the Accumulated Depreciation—Equipment account will increase $400 each month. Therefore, after recording and posting the next adjusting entry at November 30, the balance will be $800.

Statement Presentation Accumulated Depreciation—Equipment is a contra asset account. A **contra asset account** offsets an asset account on the balance sheet. This means that the Accumulated Depreciation—Equipment account offsets, or is subtracted from, the Equipment account on the balance sheet. The normal balance for this contra asset account is a credit.

Pioneer Advertising uses this account instead of crediting Equipment in order to disclose both the original cost of the equipment and the total expired cost to date. In the balance sheet, Pioneer deducts Accumulated Depreciation—Equipment from the related asset account, as shown in **Illustration 2.29**.

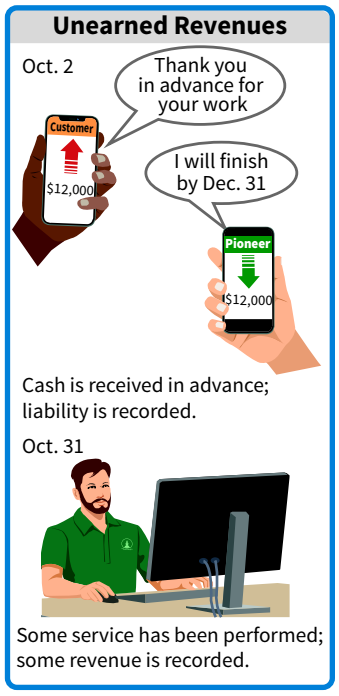
ILLUSTRATION 2.29 Balance Sheet Presentation of Accumulated Depreciation

Equipment	$50,000	
Less: Accumulated depreciation—equipment	400	$49,600

The **book value** of any depreciable asset is the difference between its cost and its related accumulated depreciation. In Illustration 2.29, the book value of the equipment at the balance sheet date is $49,600. Note that the asset's book value is **not** an indication of the asset's current fair value. Why? Because depreciation is an allocation concept, not a valuation concept. That is, depreciation allocates an asset's cost to the periods in which it is used. Depreciation does not attempt to report the actual change in the value of the asset.

- Depreciation expense reflects that portion of the asset's cost that expired during the period (in this case, October).
- Without this adjusting entry, total assets, total stockholders' equity, and net income are overstated, and depreciation expense is understated.

A company records depreciation expense in a single account for each piece of equipment, such as trucks or machinery, and for all buildings. A company also establishes related accumulated depreciation accounts for the different assets, such as Accumulated Depreciation—Trucks, Accumulated Depreciation—Machinery, and Accumulated Depreciation—Buildings.



Unearned Revenues

When companies receive cash before services are performed, they record a liability by increasing (crediting) a liability account called **unearned revenues**. In other words, a company now has a performance obligation (liability) to provide service to one of its customers. Items like rent, magazine subscriptions, and customer deposits for future service may result in unearned revenues. For example, airlines, such as **Delta**, **American**, and **Southwest**, treat receipts from the sale of tickets as unearned revenue until they satisfy the performance obligation by providing the flight service. Once flights are completed, the airline makes an adjusting entry with a debit (decrease) to the unearned revenue account and a credit (increase) to a revenue account.

Unearned revenues are the opposite of prepaid expenses. Indeed, unearned revenue on the books of one company is likely to be a prepayment on the books of the company that made the advance payment. For example, if we assume identical accounting periods, a landlord will have unearned rent revenue when a tenant has prepaid rent. Or, consider the case of **Amazon Web Services (AWS)**:

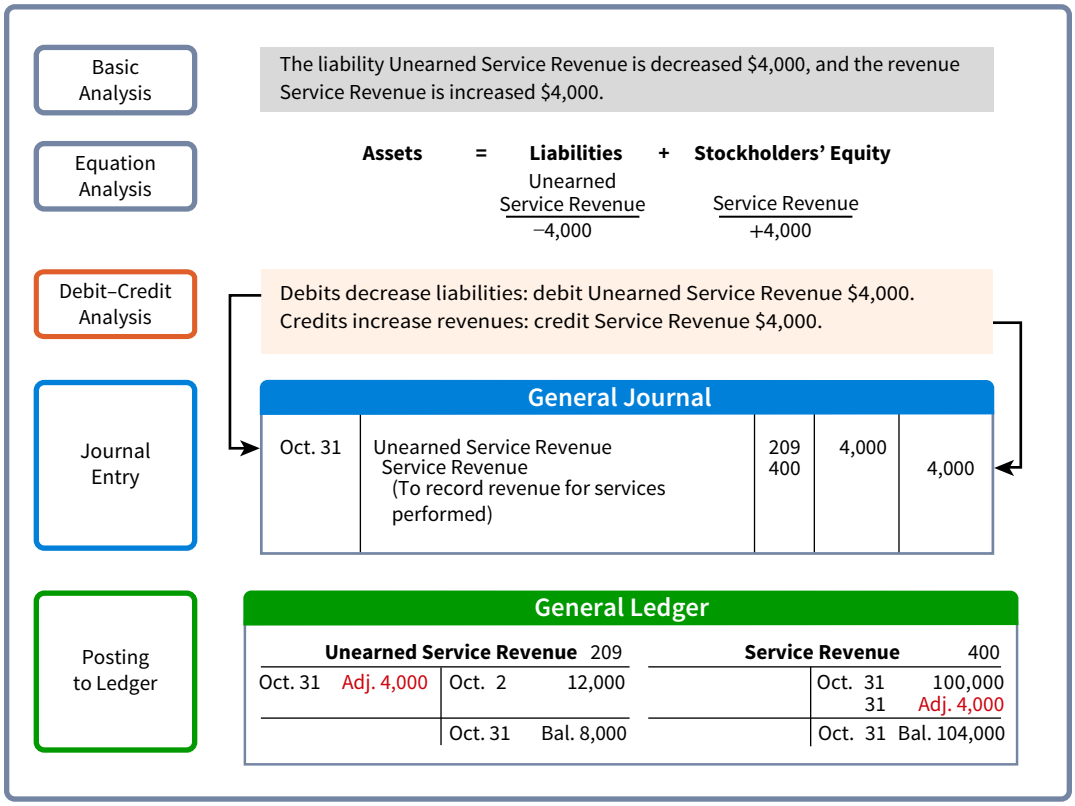
1. When AWS receives payment for services to be performed in a future accounting period, it credits an unearned revenue (a liability) account to recognize the liability that exists.
2. AWS then recognizes revenue when it performs the service.
3. AWS delays recognition of revenue until the adjustment process because daily entries are inefficient.
4. AWS makes an adjusting entry to record the revenue for services performed during the period and to show the liability that remains at the end of the accounting period.

In the typical case:

- Liabilities are overstated and revenues are understated prior to adjustment.
- The adjusting entry for unearned revenues results in a debit (decrease) to a liability account and a credit (increase) to a revenue account.

For example, Pioneer Advertising received $12,000 on October 2 from R. Knox for advertising services expected to be completed by December 31. Pioneer credited the payment to Unearned Service Revenue. This liability account shows a balance of $12,000 in the October 31 trial balance. Based on an evaluation of the service Pioneer performed for Knox during October, the company determines that it should recognize $4,000 of revenue in October. The liability (Unearned Service Revenue) is therefore decreased and stockholders' equity (Service Revenue) is increased, as shown in **Illustration 2.30**.

ILLUSTRATION 2.30 Adjustment for Unearned Service Revenue


Basic Analysis
The liability Unearned Service Revenue is decreased $4,000, and the revenue Service Revenue is increased $4,000.
Equation Analysis
Assets = Liabilities + Stockholders' Equity
Unearned Service Revenue −4,000
Service Revenue +4,000
Debit–Credit Analysis
Debits decrease liabilities: debit Unearned Service Revenue $4,000.
Credits increase revenues: credit Service Revenue $4,000.
Journal Entry
General Journal
Oct. 31 Unearned Service Revenue 209 4,000
Service Revenue 400 4,000
(To record revenue for services performed)
Posting to Ledger
General Ledger
Unearned Service Revenue 209
Oct. 31 Adj. 4,000
Oct. 2 12,000
Oct. 31 Bal. 8,000
Service Revenue 400
Oct. 31 100,000
31 Adj. 4,000
Oct. 31 Bal. 104,000
A = L + SE
−4,000
+4,000
Cash Flows
no effect

The liability Unearned Service Revenue now shows a balance of $8,000. This amount represents the remaining advertising services expected to be performed in the future. At the same time, Service Revenue shows total revenue recognized in October of $104,000. Without this adjustment:

- Revenues and net income are understated by $4,000 in the income statement.
- Liabilities will be overstated and stockholders' equity will be understated by $4,000 on the October 31 balance sheet.

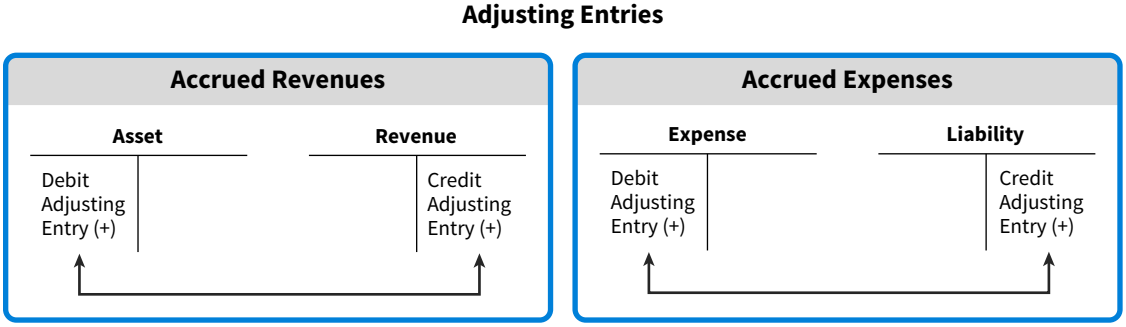
Adjusting Entries for Accruals

The second category of adjusting entries is accruals.

- Companies make adjusting entries for accruals to record revenues for services performed and expenses incurred in the current accounting period.
- Without an accrual adjustment, the revenue account (and the related asset account) or the expense account (and the related liability account) are understated. Thus, the adjusting entry for accruals **will increase both a balance sheet and an income statement account**.

Illustration 2.31 shows adjusting entries for accruals.

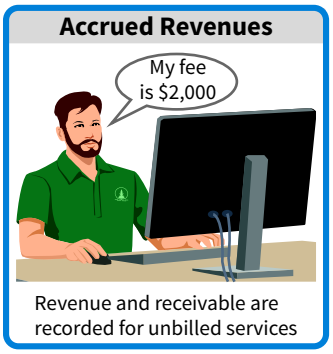
ILLUSTRATION 2.31
Adjusting Entries for Accruals



Accrued Revenues

Revenues for services performed but not yet recorded at the statement date are **accrued revenues**. Accrued revenues arise due to:

- **The passing of time.** Accrued revenues may accumulate (accrue) if a company has a savings account at a bank. In this situation, interest revenue accrues, or accumulates. These are unrecorded because the earning of interest does not involve daily transactions. Companies do not record interest revenue on a daily basis because it is impractical to do so. Companies will wait and record the interest revenue earned at the end of a period.
- **Services performed but not yet billed nor collected.** As in the case of commissions and fees, these accrued revenues may be unrecorded because only a portion of the total service has been performed and the clients will not be billed until the service has been completed.



An adjusting entry records the receivable that exists at the balance sheet date and the revenue for the services performed during the period. Prior to adjustment, both assets and revenues are understated. Accordingly, **an adjusting entry** for accrued revenues results in a debit (increase) to an asset account and a credit (increase) to a revenue account.

In October, Pioneer Advertising performed services worth $2,000 that were not billed to clients on or before October 31. Because these services are not billed, they are not recorded. The accrual of unrecorded service revenue increases an asset account, Accounts Receivable. It also increases stockholders' equity by increasing a revenue account, Service Revenue, as shown in Illustration 2.32.

ILLUSTRATION 2.32
Accrual Adjustment for Receivable and Revenue Accounts

Basic Analysis

The asset Accounts Receivable is increased $2,000, and the revenue Service Revenue is increased $2,000.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity
Accounts Receivable +2,000	=			Service Revenue +2,000

Debit–Credit Analysis

Debits increase assets: debit Accounts Receivable $2,000.
Credits increase revenues: credit Service Revenue $2,000.

Journal Entry

General Journal

Oct. 31	Accounts Receivable	112	2,000	
	Service Revenue	400		2,000
	(To record revenue for services performed)			

Posting to Ledger

General Ledger

Accounts Receivable 112			Service Revenue 400		
Oct. 31	72,000			Oct. 31	100,000
				31	4,000
31	Adj. 2,000			31	Adj. 2,000
Oct. 31 Bal.	74,000			Oct. 31 Bal.	106,000

A = L + SE
+2,000 +2,000
Cash Flows no effect

The asset Accounts Receivable shows that clients owe $74,000 at the balance sheet date. The balance of $106,000 in Service Revenue represents the total revenue for services performed by Pioneer during the month ($100,000 + $4,000 + $2,000). **Without an adjusting entry, assets and stockholders' equity on the balance sheet, and revenues and net income on the income statement, are understated.**

Accrued Expenses

Expenses incurred but not yet paid or recorded at the statement date are called **accrued expenses**. Interest, rent, taxes, and salaries are common examples. Accrued expenses result from the same causes as accrued revenues, the passage of time and the occurrence of an expense that has not been paid. In fact, an accrued expense on the books of one company is an accrued revenue to another company. For example, the $2,000 accrual of service revenue by Pioneer Advertising is an accrued expense to the client that received the service.

- An adjusting entry for accrued expense includes a debit (increase) to the appropriate expense account and a credit (increase) to a liability account.
- The liability reflects an obligation that exists at the balance sheet date to pay for the expense in the future.
- **Prior to adjustment, both liabilities and expenses are understated.**

Accrued Interest Pioneer Advertising signed a three-month note payable in the amount of $50,000 on October 1. The note requires interest at an annual rate of 12%. Three factors determine the amount of the interest accumulation:

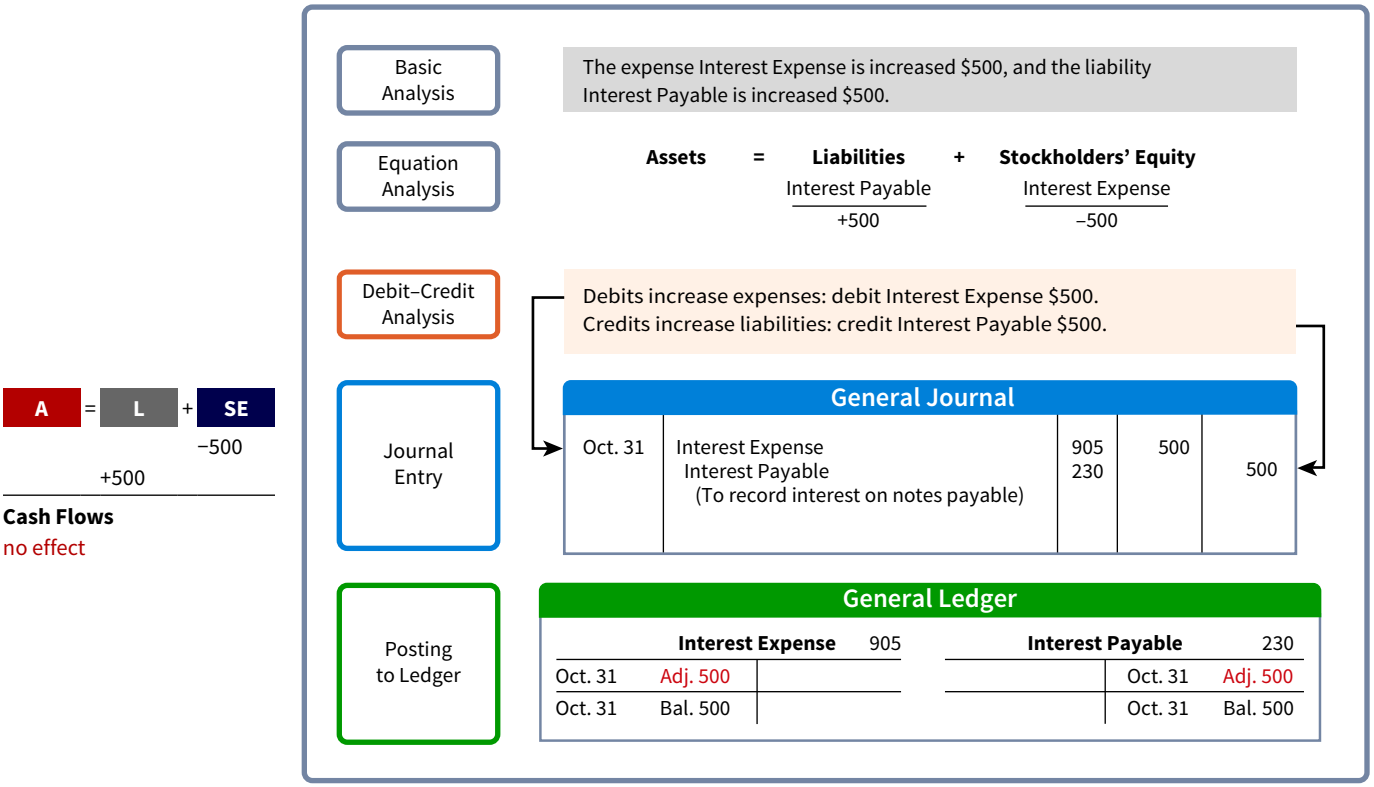
1. The face value of the note.
2. The interest rate, which is always expressed as an annual rate.
3. The length of time the note is outstanding.

For Pioneer, the total interest due on the $50,000 note at its maturity date three months' in the future is $1,500 ($50,000 × .12 × 3/12), or $500 for one month. **The following shows** the formula for computing interest and its application to Pioneer. Note that the formula expresses the time period as a fraction of a year.

Face Value of Note	×	Annual Interest Rate	×	Time in Terms of One Year	=	Interest
$50,000	×	.12	×	1/12	=	$500

As **Illustration 2.33** shows, the accrual of interest at October 31 increases a liability account, Interest Payable. It also decreases stockholders' equity by increasing an expense account, Interest Expense.

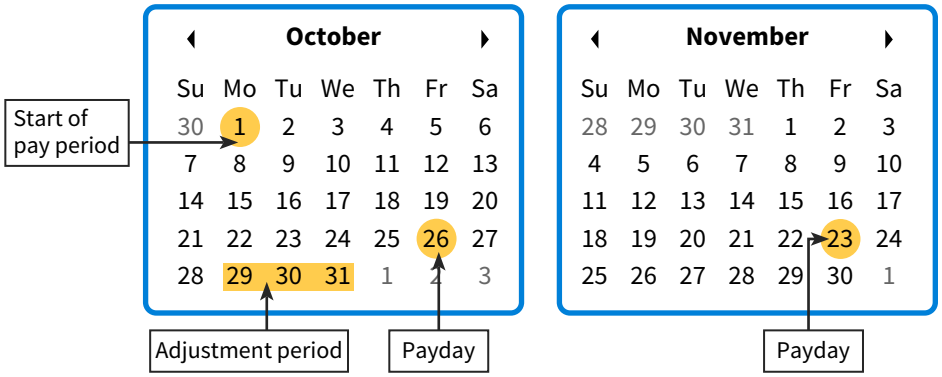
ILLUSTRATION 2.33 Adjustment for Interest



Interest Expense shows the interest that accrued for the month of October. Interest Payable shows the amount of interest owed at the end of October. Pioneer will not pay this amount until the note comes due at the end of three months. Why does Pioneer use the Interest Payable account instead of crediting Notes Payable? By recording interest payable separately, Pioneer discloses the two different types of obligations—interest and principal—in the accounts and financial statements. **Without this adjusting entry, liabilities and interest expense are understated, and both net income and stockholders' equity are overstated.**

Accrued Salaries and Wages Companies pay for some types of expenses, such as employee salaries and wages, after the services have been performed. For example, Pioneer Advertising last paid salaries and wages on October 26. It will not pay salaries and wages again until November 23. However, as shown in Illustration 2.34, three working days remain in October (October 29–31).

ILLUSTRATION 2.34 Accrued Salaries and Wages



At October 31, the salaries and wages for these three days represent an accrued expense and a related liability to Pioneer. The employees receive total salaries and wages of $10,000 for a five-day work week, or $2,000 per day. Thus, accrued salaries and wages at October 31 are $6,000 ($2,000 × 3). The analysis and adjustment process is summarized in **Illustration 2.35**.

ILLUSTRATION 2.35 Adjustment for Salaries and Wages Expense

Basic Analysis

The expense Salaries and Wages Expense is increased $6,000, and the liability account Salaries and Wages Payable is increased $6,000.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity
		Salaries and Wages Payable		Salaries and Wages Expense
		+6,000		−6,000

Debit–Credit Analysis

Debits increase expenses: debit Salaries and Wages Expense $6,000.
Credits increase liabilities: credit Salaries and Wages Payable $6,000.

Journal Entry

General Journal

Oct. 31	Salaries and Wages Expense	726	6,000	
	Salaries and Wages Payable	212		6,000
	(To record accrued salaries)			

Posting to Ledger

General Ledger

Salaries and Wages Expense 726

Oct. 26		40,000			
31	Adj.	6,000			
Oct. 31	Bal.	46,000			

Salaries and Wages Payable 212

			Oct. 31	Adj.	6,000
			Oct. 31	Bal.	6,000

A = L + SE
−6,000
+6,000
Cash Flows
no effect

After this adjustment, the balance in Salaries and Wages Expense of $46,000 (23 days × $2,000) is the actual salaries and wages expense for October. The balance in Salaries and Wages Payable of $6,000 is the amount of the liability for salaries and wages owed as of October 31. **Without the $6,000 adjustment for salaries, both Pioneer's expenses and liabilities are understated by $6,000.**

Pioneer pays salaries and wages every four weeks. Consequently, the next payday is November 23, when it will again pay total salaries and wages of $40,000. The payment consists of $6,000 of salaries and wages payable at October 31 plus $34,000 of salaries and wages expense for November (17 working days as shown in the November calendar × $2,000). Therefore, Pioneer makes the following entry on November 23.

November 23

Salaries and Wages Payable	6,000	
Salaries and Wages Expense	34,000	
Cash		40,000

A = L + SE
−6,000
−34,000
−40,000
Cash Flows
−40,000

This entry eliminates the liability for Salaries and Wages Payable that Pioneer recorded in the October 31 adjusting entry. This entry also records the proper amount of Salaries and Wages Expense for the period between November 1 and November 23.

Bad Debts Accounts receivable represents amounts owed to the company from customers. Do you think that all customers are going to pay what they owe? Most likely not. Therefore, GAAP requires that companies estimate uncollectible accounts receivable at the end of each period and record bad debt expense. This ensures receivables are reported on the balance sheet at an amount that is expected to be received, sometimes referred to as net realizable value.

Bad Debts

Oct. 31

Uncollectible accounts; record bad debt expense

- At the end of each period, a company estimates the amount of receivables that will later prove to be uncollectible.
- A company bases the estimate on various factors such as the amount of bad debts it experienced in past years, general economic conditions, how long the receivables are past due, and other factors that indicate the extent of uncollectibility.

To illustrate, assume that, based on past experience, Pioneer Advertising reasonably estimates a bad debt expense for the month of $1,600. The analysis and adjustment process for bad debts is summarized in **Illustration 2.36**.

ILLUSTRATION 2.36 Adjustment for Bad Debt Expense

Basic Analysis

The expense Bad Debt Expense is increased $1,600, and the contra asset Allowance for Doubtful Accounts is increased $1,600.

Equation Analysis

Assets	=	Liabilities	+	Stockholders' Equity
Allowance for Doubtful Accounts				Bad Debt Expense
−1,600				−1,600

Debit–Credit Analysis

Debits increase expenses: debit Bad Debt Expense $1,600.
Credits increase contra assets: credit Allowance for Doubtful Accounts $1,600.

Journal Entry

General Journal

Oct. 31	Bad Debt Expense	750	1,600	
	Allowance for Doubtful Accounts	113		1,600
	(To record monthly bad debt expense)			

Posting to Ledger

General Ledger

Accounts Receivable 112

Oct. 31	72,000		
31	2,000		
Oct 31	Bal.74,000		

Allowance for Doubtful Accounts 113

	Oct. 31	Adj.	1,600
Oct. 31	Bal.		1,600

Bad Debt Expense 750

Oct. 31	Adj.	1,600	
Oct. 31	Bal.	1,600	

A = L + SE
−1,600
−1,600
Cash Flows
no effect

The Allowance for Doubtful Accounts is a contra asset account, just like Accumulated Depreciation. On the balance sheet, the Allowance for Doubtful Accounts offsets, or is subtracted from, Accounts Receivable to reflect net realizable value of Accounts Receivable. A company generally computes bad debts by adjusting Allowance for Doubtful Accounts to a certain percentage of the trade accounts receivable and trade notes receivable at the end of the period.

Adjusted Trial Balance

ANALYZE → JOURNALIZE → POST → TRIAL BALANCE → ADJUSTING ENTRIES → **Adjusted trial balance** → PREPARE FINANCIAL STATEMENTS → JOURNALIZE AND POST CLOSING ENTRIES → PREPARE A POST-CLOSING TRIAL BALANCE

After journalizing and posting all adjusting entries, Pioneer Advertising prepares another trial balance from its ledger accounts (see **Illustration 2.37**). This trial balance is called an **adjusted trial balance**, which proves the equality of the total debit balances and the total

credit balances in the ledger after all adjustments. Because the accounts contain all data needed for financial statements, the adjusted trial balance is the **primary basis for the preparation of financial statements**.

Pioneer Advertising
Adjusted Trial Balance
October 31, 2025

	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	74,000	
Allowance for Doubtful Accounts		$ 1,600
Supplies	10,000	
Prepaid Insurance	5,500	
Equipment	50,000	
Accumulated Depreciation—Equipment		400
Notes Payable		50,000
Accounts Payable		25,000
Interest Payable		500
Unearned Service Revenue		8,000
Salaries and Wages Payable		6,000
Common Stock		100,000
Dividends	5,000	
Service Revenue		106,000
Salaries and Wages Expense	46,000	
Supplies Expense	15,000	
Rent Expense	9,000	
Insurance Expense	500	
Interest Expense	500	
Depreciation Expense	400	
Bad Debt Expense	1,600	
	$297,500	$297,500

ILLUSTRATION 2.37 Adjusted Trial Balance

Put It into Practice LO 2.3

Prepare Adjusting Entries and Show Their Effects on the Trial Balance

FACTS The following is the trial balance for Kleene Windows Washing, Inc.

Kleene Window Washing Inc.
Trial Balance
July 31, 2025

	Debit	Credit
Cash	$ 5,410	
Accounts Receivable	4,600	
Supplies	900	
Prepaid Insurance	1,800	
Equipment	8,000	
Accumulated Depreciation— Equipment		
Accounts Payable		$ 5,400
Salaries and Wages Payable		
Common Stock		12,000
Dividends	600	
Service Revenue		6,200
Maintenance and Repairs Expense	290	
Supplies Expense		
Depreciation Expense		
Insurance Expense		
Salaries and Wages Expense	2,000	
	$23,600	$23,600

INSTRUCTIONS

a. Journalize the following adjustments.

1. Services performed but unbilled and uncollected at July 31 were $1,700.
2. Depreciation on equipment for the month was $180.
3. One-twelfth of the insurance expired.
4. A count shows $320 of cleaning supplies on hand at July 31.
5. Accrued but unpaid employee salaries were $400.

b. Show the effects on the trial balance to prepare an adjusted trial balance.

SOLUTION

a.

General Journal

	Date	Account Titles	Debit	Credit
1.	July 31	Accounts Receivable	1,700	
		Service Revenue		1,700
2.	31	Depreciation Expense	180	
		Accumulated Depreciation—Equipment		180
3.	31	Insurance Expense ($1,800 × 1/12)	150	
		Prepaid Insurance		150
4.	31	Supplies Expense ($900 – $320)	580	
		Supplies		580
5.	31	Salaries and Wages Expense	400	
		Salaries and Wages Payable		400

b.

Kleene Window Washing Inc.
Trial Balances
July 31, 2025

	Unadjusted		Adjustments		After Adjustment	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash	$ 5,410				$ 5,410	
Accounts Receivable	4,600		1,700		6,300	
Supplies	900			580	320	
Prepaid Insurance	1,800			150	1,650	
Equipment	8,000				8,000	
Accumulated Depreciation—Equipment				180		$ 180
Accounts Payable		$ 5,400				5,400
Salaries and Wages Payable				400		400
Common Stock		12,000				12,000
Dividends	600				600	
Service Revenue		6,200		1,700		7,900
Maintenance and Repairs Expense	290				290	
Supplies Expense			580		580	
Depreciation Expense			180		180	
Insurance Expense			150		150	
Salaries and Wages Expense	2,000		400		2,400	
	$23,600	$23,600			$25,880	$25,880

2.4 Preparing Financial Statements

LEARNING OBJECTIVE 4

Prepare financial statements from the adjusted trial balance and prepare closing entries.

ANALYZE → JOURNALIZE → POST → TRIAL BALANCE → ADJUSTING ENTRIES → ADJUSTED TRIAL BALANCE → **Prepare financial statements** → JOURNALIZE AND POST CLOSING ENTRIES → PREPARE A POST-CLOSING TRIAL BALANCE

As indicated above, **Pioneer Advertising can prepare financial statements directly from the adjusted trial balance.** Illustrations 2.38 and 2.39 show the interrelationships of data in the adjusted trial balance and the financial statements.

As Illustration 2.38 shows, Pioneer prepares the income statement from the revenue and expense accounts. Next, it derives the retained earnings statement from the retained earnings and dividends accounts and the net income (or net loss) shown in the income statement.

ILLUSTRATION 2.38 Preparation of the Income Statement and Retained Earnings Statement from the Adjusted Trial Balance

Pioneer Advertising
Adjusted Trial Balance
October 31, 2025

Account	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	74,000	
Allowance for Doubtful Accounts		$ 1,600
Supplies	10,000	
Prepaid Insurance	5,500	
Equipment	50,000	
Accumulated Depreciation—Equipment		400
Notes Payable		50,000
Accounts Payable		25,000
Unearned Service Revenue		8,000
Salaries and Wages Payable		6,000
Interest Payable		500
Common Stock		100,000
Retained Earnings		–0–
Dividends	5,000	
Service Revenue		106,000
Salaries and Wages Expense	46,000	
Supplies Expense	15,000	
Rent Expense	9,000	
Insurance Expense	500	
Interest Expense	500	
Depreciation Expense	400	
Bad Debt Expense	1,600	
	$297,500	$297,500

Pioneer Advertising
Income Statement
For the Month Ended October 31, 2025

Revenues		
Service revenue		$106,000
Expenses		
Salaries and wages expense	$46,000	
Supplies expense	15,000	
Rent expense	9,000	
Insurance expense	500	
Interest expense	500	
Depreciation expense	400	
Bad debt expense	1,600	
Total expenses		73,000
Net income		$ 33,000

Pioneer Advertising
Retained Earnings Statement
For the Month Ended October 31, 2025

Retained earnings, October 1	$ –0–
Add: Net income	33,000
	33,000
Less: Dividends	5,000
Retained earnings, October 31	$28,000

To balance sheet

As Illustration 2.39 shows, Pioneer then prepares the balance sheet from the asset and liability accounts, the common stock account, and the ending retained earnings balance as reported in the retained earnings statement.

ILLUSTRATION 2.39 Preparation of the Balance Sheet from the Adjusted Trial Balance

Pioneer Advertising
Adjusted Trial Balance
October 31, 2025

Account	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	74,000	
Allowance for Doubtful Accounts		$ 1,600
Supplies	10,000	
Prepaid Insurance	5,500	
Equipment	50,000	
Accumulated Depreciation—Equipment		400
Notes Payable		50,000
Accounts Payable		25,000
Unearned Service Revenue		8,000
Salaries and Wages Payable		6,000
Interest Payable		500
Common Stock		100,000
Retained Earnings		–0–
Dividends	5,000	
Service Revenue		106,000
Salaries and Wages Expense	46,000	
Supplies Expense	15,000	
Rent Expense	9,000	
Insurance Expense	500	
Interest Expense	500	
Depreciation Expense	400	
Bad Debt Expense	1,600	
	$297,500	$297,500

Pioneer Advertising
Balance Sheet
October 31, 2025

Assets

Cash		$ 80,000
Accounts receivable	$74,000	
Less: Allowance for doubtful accounts	1,600	72,400
Supplies		10,000
Prepaid insurance		5,500
Equipment	50,000	
Less: Accumulated depreciation—equipment	400	49,600
Total assets		$217,500

Liabilities and Stockholders' Equity

Liabilities		
Notes payable		$ 50,000
Accounts payable		25,000
Unearned service revenue		8,000
Salaries and wages payable		6,000
Interest payable		500
Total liabilities		89,500
Stockholders' equity		
Common stock	$100,000	
Retained earnings	28,000	128,000
Total liabilities and stockholders' equity		$217,500

Balance at Oct. 31 from retained earnings statement in Illustration 2.38

Closing

The **closing process** reduces the balance of nominal (temporary) accounts to zero in order to prepare the accounts for the next period's transactions. In the closing process, Pioneer Advertising transfers all of the revenue and expense account balances (income statement items) to a clearing or suspense account called Income Summary.

1. Pioneer uses this clearing account only at the end of each accounting period.
2. The balance in the account represents the net income or net loss for the period.
3. Pioneer then transfers this amount (the net income or net loss) to a stockholders' equity account.

(For a corporation, the stockholders' equity account is retained earnings; for proprietorships and partnerships, it is a capital account.) Companies post all such **closing entries** to the appropriate general ledger accounts.

Closing Entries

In practice, companies generally prepare closing entries only at the end of a company's annual accounting period. However, to illustrate the journalizing and posting of closing entries, we will assume that Pioneer Advertising closes its books monthly. **Illustration 2.40** shows the closing entries at October 31.

ILLUSTRATION 2.40 Closing Entries Journalized

General Journal			J3
Date	**Account Titles and Explanation**	**Debit**	**Credit**
	Closing Entities		
	(1)		
Oct. 31	Service Revenue	106,000	
	Income Summary		106,000
	(To close revenue account)		
	(2)		
31	Income Summary	73,000	
	Supplies Expense		15,000
	Deprecation Expense		400
	Insurance Expense		500
	Salaries and Wages Expense		46,000
	Rent Expense		9,000
	Interest Expense		500
	Bad Debt Expense		1,600
	(To close expense accounts)		
	(3)		
31	Income Summary	33,000	
	Retained Earnings ($106,000–$73,000)		33,000
	(To close net income to retained earnings)		
	(4)		
31	Retained Earnings	5,000	
	Dividends		5,000
	(To close dividends to retained earnings)		

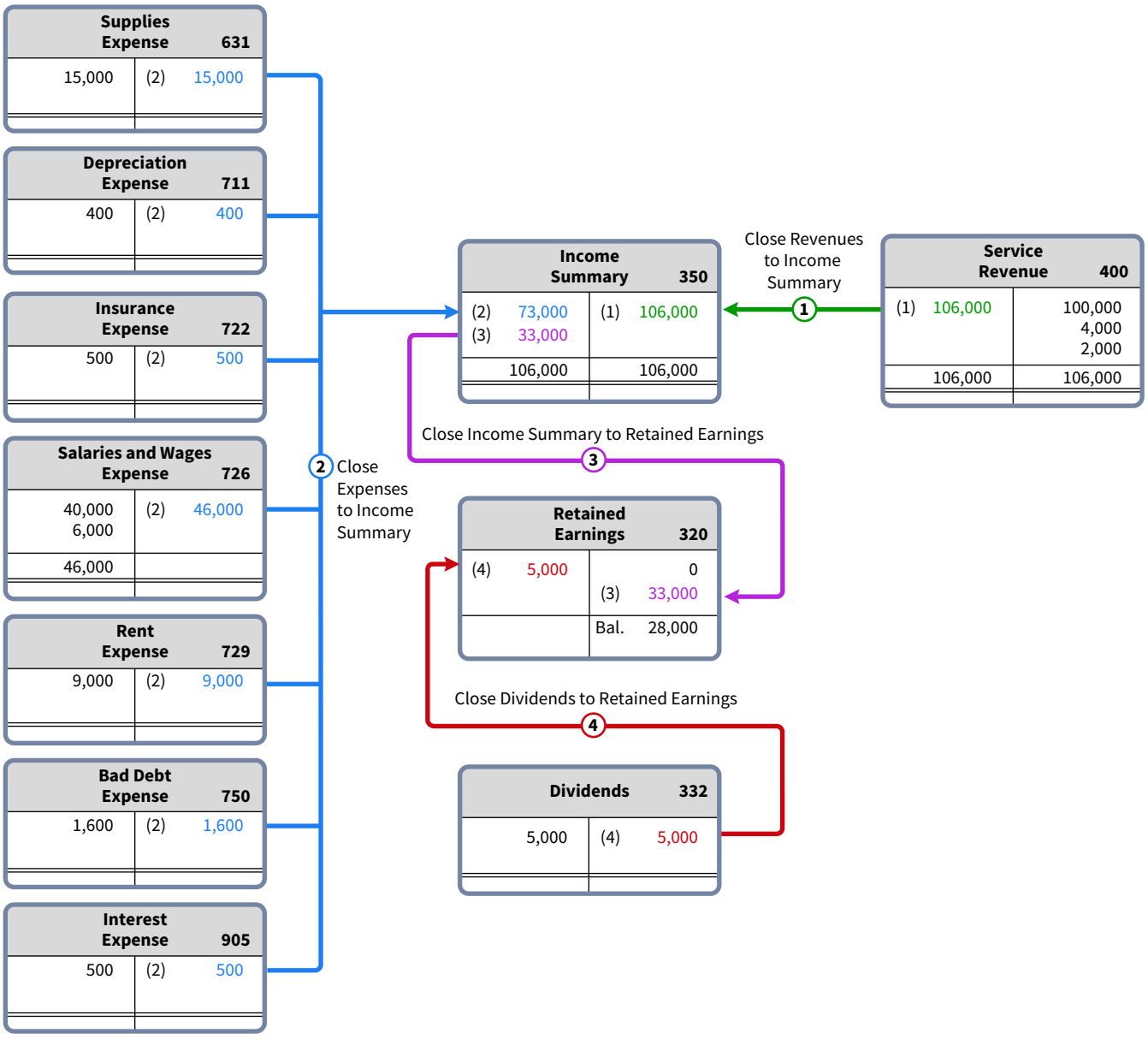
A couple of cautions about preparing closing entries.

1. Avoid unintentionally doubling the revenue and expense balances rather than zeroing them. For example, revenue and gain accounts have a normal credit side balance, so to zero out the temporary revenue accounts, you must debit revenue and credit the temporary income summary account.
2. Do not close Dividends through the Income Summary account. **Dividends are not expenses, and they are not a factor in determining net income.** Dividends should be closed out through Retained Earnings to reflect that they are a distribution of earnings back to the owners.

Posting Closing Entries

Illustration 2.41 shows the posting of closing entries. All temporary accounts have zero balances after posting the closing entries. In addition, note that the balance in Retained Earnings represents the accumulated undistributed earnings of Pioneer Advertising at the end of the accounting period. Pioneer reports the ending balance in retained earnings in the balance sheet. As noted above, **Pioneer uses the Income Summary account only in closing**. It does not journalize and post entries to this account during the year.

ILLUSTRATION 2.41 Posting of Closing Entries



- As part of the closing process, Pioneer totals, balances, and double-underlines the **temporary accounts**—revenues, expenses, and dividends—as shown in T-account form in Illustration 2.41.
- It does not close the **permanent accounts**—assets, liabilities, and stockholders' equity (Common Stock and Retained Earnings). Instead, Pioneer draws a single underline beneath the current period entries for the permanent accounts. The account balance is then entered below the single underline and is carried forward to the next period (see, for example, Retained Earnings).

After the closing process, each income statement account and the dividends account are balanced out to zero and are ready for use in the next accounting period.

Post-Closing Trial Balance

Recall that a trial balance is prepared after entering the regular transactions of the period, and that a second trial balance (the adjusted trial balance) occurs after posting the adjusting

entries. A company may prepare a third trial balance after posting the closing entries. The trial balance after closing is called the **post-closing trial balance**.

- The purpose of the post-closing trial balance is to prove the equality of the permanent account balances that the company carries forward into the next accounting period.
- Since all temporary accounts will have zero balances, the post-closing trial balance will contain only permanent (real)—balance sheet—accounts.

Illustration 2.42 shows the post-closing trial balance of Pioneer Advertising.

ILLUSTRATION 2.42 Post-Closing Trial Balance

Pioneer Advertising
Post-Closing Trial Balance
October 31, 2025

	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	74,000	
Allowance for Doubtful Accounts		$ 1,600
Supplies	10,000	
Prepaid Insurance	5,500	
Equipment	50,000	
Accumulated Depreciation—Equipment		400
Notes Payable		50,000
Accounts Payable		25,000
Unearned Service Revenue		8,000
Salaries and Wages Payable		6,000
Interest Payable		500
Common Stock		100,000
Retained Earnings		28,000
	$219,500	$219,500

A post-closing trial balance provides evidence that the company has properly journalized and posted the closing entries. It also shows that the accounting equation is in balance at the end of the accounting period. However, like the other trial balances, it does not prove that the company has recorded all transactions or that the ledger is correct. For example, if Pioneer did not record depreciation expense on their equipment in October, the trial balance would balance, but their financial statements would not be correct.

Reversing Entries—An Optional Step

Some accountants prefer to reverse the effects of certain adjusting entries by making a reversing entry at the beginning of the next accounting period. A **reversing entry** is the exact opposite of the adjusting entry made in the previous period. Use of reversing entries is an optional bookkeeping procedure; it is not a required step in the accounting cycle. Accordingly, we have chosen to cover this topic in Appendix 2B.

The Accounting Cycle Summarized

Illustration 2.43 summarizes the steps in the accounting cycle and shows a logical sequence of the accounting procedures used during a fiscal period.

ILLUSTRATION 2.43 Required Steps in the Accounting Cycle

The Accounting Cycle

① Analyze Business Transactions

Trans-action	Assets: Cash	+ Accounts Receivable	+ Equipment	= Liabilities: Notes Payable	+ Accounts Payable	+ Stockholders' Equity: Common Stock	+ Retained Earnings: Rev.	− Exp.	− Div.	
(1)	+$10,000			=		+$10,000				Issued Stock
(2)	−800							−$ 800		Rent Expense
(3)			+$3,000	=	+$3,000					Purch. Equip.
(4)	+1,500						+$1,500			Service Revenue
(5)	+700			+$700						Borrowing
(6)		+$2,000					+2,000			Service Revenue
(7)	−500							−500		Sal./Wages Exp.
	−300							−300		Utilities Exp.
	−100							−100		Adv. Exp.
	$10,500	+ $2,000	+ $3,000	= $700	+ $3,000	+ $10,000	+ $3,500	− $1,700		
		$15,500				$15,500				

② Journalize the Transactions

General Journal — Page J1

Date	Account Titles and Explanation	Ref.	Debit	Credit
2025				
Oct. 1	Cash	101	100,000	
	Common Stock	311		100,000
	(Issued common stock for cash)			
1	Equipment	157	50,000	
	Notes Payable	200		50,000
	(Issued 3-month,12% note for office equipment)			
2	Cash	101	12,000	
	Unearned Service Revenue	209		12,000
	(Received advance form R. Knox for future services)			
3	Rent Expense	729	9,000	
	Cash	101		9,000
	(Paid cash for October office rent)			
4	Prepaid Insurance	130	6,000	
	Cash	101		6,000
	(Paid one-year policy; effective date October 1)			

③ Post to the Ledger Accounts

General Ledger

Cash — No. 101

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 1		J1	100,000		100,000
2		J1	12,000		112,000
3		J1		9,000	103,000
4		J1		6,000	97,000
26		J1		40,000	57,000
31		J1	28,000		85,000
31		J1		5,000	80,000

Accounts Receivable — No. 112

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 31		J1	72,000		72,000

Supplies — No. 126

Date	Explanation	Ref.	Debit	Credit	Balance

Accounts Payable — No. 201

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 5		J1		25,000	25,000

Unearned Service Revenue — No. 209

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 2		J1		12,000	12,000

Common Stock — No. 311

Date	Explanation	Ref.	Debit	Credit	Balance
2025					
Oct. 1		J1		100,000	100,000

Dividends — No. 332

Date	Explanation	Ref.	Debit	Credit	Balance

④ Prepare a Trial Balance

Pioneer Advertising
Trial Balance
October 31, 2025

	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	72,000	
Supplies	25,000	
Prepaid Insurance	6,000	
Equipment	50,000	
Notes Payable		$ 50,000
Accounts Payable		25,000
Unearned Service Revenue		12,000
Common Stock		100,000
Dividends	5,000	
Service Revenue		100,000
Salaries and Wages Expense	40,000	
Rent Expense	9,000	
	$287,000	$287,000

⑤ Journalize and Post Adjusting Entries: Deferrals/Accruals

General Journal

Date	Account Titles and Explanation	Debit	Credit
2025	Adjusting Entries		
Oct. 31	Supplies Expense	1,500	
	Supplies		1,500
	(To record supplies used)		
31	Insurance Expense		
	Prepaid Insurance		
	(To record insurance expire		
31	Depreciation Expense		
	Accumulated Depreciation—E		
	(To record monthly deprec		

General Ledger

Cash

Oct. 1	10,000	Oct. 2	5,000
1	5,000	3	900
2	1,200	4	600
3	10,000	20	500
		26	4,000
Oct. 31	Bal. 15,200		

Accumulated Depreciation—Equipment

		Oct. 31	40
		Oct. 31	Bal. 40

Notes Payable

		Oct. 1	50,000

⑥ Prepare an Adjusted Trial Balance

Pioneer Advertising
Adjusted Trial Balance
October 31, 2025

	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	74,000	
Allowance for Doubtful Accounts		$ 1,600
Supplies	10,000	
Prepaid Insurance	5,500	
Equipment	50,000	
Accumulated Depreciation—Equipment		400
Notes Payable		50,000
Accounts Payable		25,000
Interest Payable		500
Unearned Service Revenue		8,000
Salaries and Wages Payable		6,000
Common Stock		100,000
Dividends	5,000	
Service Revenue		106,000
Salaries and Wages Expense	46,000	

⑦ Prepare Financial Statements

Pioneer Advertising
Income Statement
For the Month Ended October 31, 2025

Revenues	
Service revenue	$106,000
Expenses	
Salaries and wages exp	
Supplies expense	
Rent expense	
Insurance expense	
Interest expense	
Depreciation expense	

Pioneer Advertising
Retained Earnings Statement
For the Month Ended October 31, 2025

Retained earnings, October 1	$ –0–
Add: Net income	33,000

Pioneer Advertising
Balance Sheet
October 31, 2025
Assets

Cash		$ 80,000
Accounts receivable	$74,000	
Less: Allowance for doubtful accounts	1,600	72,400
Supplies		10,000
Prepaid insurance		5,500
Equipment	50,000	
Less: Accumulated depreciation—equipment	400	49,600

⑧ Journalize and Post Closing Entries

General Journal — J3

Date	Account Titles and Explanation	Debit	Credit
	Closing Entries		
	(1)		
Oct. 31	Service Revenue	106,000	
	Income Summary		106,000
	(To close revenue account)		
	(2)		
31	Income Summary	73,000	
	Supplies Expense		15,000
	Depreciation Expense		400
	Insurance Expense		500
	Salaries and Wages Expense		46,000
	Rent Expense		9,000
	Interest Expense		500

⑨ Prepare a Post-Closing Trial Balance

Pioneer Advertising
Post-Closing Trial Balance
October 31, 2025

	Debit	Credit
Cash	$ 80,000	
Accounts Receivable	74,000	
Allowance for Doubtful Accounts		$ 1,600
Supplies	10,000	
Prepaid Insurance	5,500	
Equipment	50,000	
Accumulated Depreciation—Equipment		400
Notes Payable		50,000
Accounts Payable		25,000
Unearned Service Revenue		8,000
Salaries and Wages Payable		6,000
Interest Payable		500
Common Stock		100,000
Retained Earnings		28,000
	$219,500	$219,500

Put It into Practice LO 2.4

Complete the Closing Process

FACTS The following are the trial balances for Kleene Window Washing Inc.

Kleene Window Washing Inc.
Trial Balances
July 31, 2025

	Unadjusted		Adjustments		After Adjustment	
	Debit	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
Cash	$ 5,410				$ 5,410	
Accounts Receivable	4,600		1,700		6,300	
Supplies	900			580	320	
Prepaid Insurance	1,800			150	1,650	
Equipment	8,000				8,000	
Accumulated Depreciation—Equipment				180		$ 180
Accounts Payable		$ 5,400				5,400
Salaries and Wages Payable				400		400
Common Stock		12,000				12,000
Dividends	600				600	
Service Revenue		6,200		1,700		7,900
Maintenance and Repairs Expense	290				290	
Supplies Expense			580		580	
Depreciation Expense			180		180	
Insurance Expense			150		150	
Salaries and Wages Expense	2,000		400		2,400	
	$23,600	$23,600			$25,880	$25,880

INSTRUCTIONS

a. Prepare the income statement and a retained earnings statement for July and a classified balance sheet at July 31.

b. Journalize and post closing entries and complete the closing process.

c. Prepare a post-closing trial balance at July 31.

SOLUTION

a.

Kleene Window Washing Inc.
Income Statement
For the Month Ended July 31, 2025

Revenues		
Service revenue		$7,900
Expenses		
Salaries and wages expense	$2,400	
Supplies expense	580	
Maintenance and repairs expense	290	
Depreciation expense	180	
Insurance expense	150	
Total expenses		3,600
Net income		$4,300

Kleene Window Washing Inc.
Retained Earnings Statement
For the Month Ended July 31, 2025

Retained earnings, July 1	$ 0
Add: Net income	4,300
	4,300
Less: Dividends	600
Retained earnings, July 31	$3,700

Kleene Window Washing Inc.
Balance Sheet
July 31, 2025

Assets

Current assets		
Cash	$5,410	
Accounts receivable	6,300	
Supplies	320	
Prepaid insurance	1,650	
Total current assets		$13,680
Property, plant, and equipment		
Equipment	8,000	
Less: Accumulated depreciation	180	7,820
Total assets		$21,500

Liabilities and Stockholders' Equity

Current liabilities		
Accounts payable	$ 5,400	
Salaries and wages payable	400	
Total current liabilities		$ 5,800
Stockholders' equity		
Common stock	12,000	
Retained earnings	3,700	
Total stockholders' equity		15,700
Total liabilities and stockholders' equity		$21,500

b.

General Journal

Date	Account Titles and Explanation	Debit	Credit
July 31	Service Revenue	7,900	
	Income Summary		7,900
31	Income Summary	3,600	
	Salaries and Wages Expense		2,400
	Supplies Expense		580
	Maintenance and Repairs Expense		290
	Depreciation Expense		180
	Insurance Expense		150
31	Income Summary	4,300	
	Retained Earnings		4,300
31	Retained Earnings	600	
	Dividends		600

c.

Kleene Window Washing Inc.
Post-Closing Trial Balance
July 31, 2025

	Debit	Credit
Cash	$ 5,410	
Accounts Receivable	6,300	
Supplies	320	
Prepaid Insurance	1,650	
Equipment	8,000	
Accumulated Depreciation—Equipment		$ 180
Accounts Payable		5,400
Salaries and Wages Payable		400
Common Stock		12,000
Retained Earnings		3,700
	$21,680	$21,680

2.5 Financial Statements for a Merchandising Company

LEARNING OBJECTIVE 5

Prepare financial statements for a merchandising company.

Pioneer Advertising is a service company. In this section, we show a detailed set of financial statements for a merchandising company, Uptown Cabinet Corp. The financial statements (see Illustrations 2.44 to 2.46) are prepared from the adjusted trial balance (not shown).

Income Statement

The income statement for Uptown, shown in **Illustration 2.44**, is self-explanatory. The **income statement** classifies amounts into such categories as gross profit on sales, income from operations, income before taxes, and net income. Although earnings per share information is required to be shown on the face of the income statement for a corporation, we omit this item here as it will be discussed more fully later in the text. *For homework problems, do not present earnings per share information unless required to do so.*

ILLUSTRATION 2.44 Income Statement for a Merchandising Company

Uptown Cabinet Corp.
Income Statement
For the Year Ended December 31, 2025

Net sales			$400,000
Cost of goods sold			316,000
Gross profit on sales			84,000
Selling expenses			
Salaries and wages expense (sales)	$20,000		
Advertising expense	10,200		
Total selling expenses		$30,200	
Administrative expenses			
Salaries and wages expense (general)	19,000		
Depreciation expense—equipment	6,700		
Property tax expense	5,300		
Rent expense	4,300		
Bad debt expense	1,000		
Telephone and Internet expense	600		
Insurance expense	360		
Total administrative expenses		37,260	
Total selling and administrative expenses			67,460
Income from operations			16,540
Other revenues and gains			
Interest revenue			800
			17,340
Other expenses and losses			
Interest expense			1,700
Income before income taxes			15,640
Income tax			3,440
Net income			$ 12,200

Retained Earnings Statement

A corporation may retain the net income earned in the business, or it may distribute it to stockholders by payment of dividends. The **retained earnings statement** reconciles the balance of the retained earnings account from the beginning to the end of the period. For example, as shown in Illustration 2.45, Uptown added the net income earned during the year to the balance of retained earnings on January 1, thereby increasing the balance of retained earnings. Deducting dividends of $2,000 results in the ending retained earnings balance of $26,400 on December 31.

ILLUSTRATION 2.45 Retained Earnings Statement for a Merchandising Company

Uptown Cabinet Corp.
Retained Earnings Statement
For the Year Ended December 31, 2025

Retained earnings, January 1	$16,200
Add: Net income	12,200
	28,400
Less: Dividends	2,000
Retained earnings, December 31	$26,400

Balance Sheet

The **balance sheet** for Uptown, shown in **Illustration 2.46**, is a classified balance sheet that shows the financial condition of a company at the end of a period. Interest receivable, inventory, prepaid insurance, and prepaid rent are included as current assets. Uptown considers these assets current because they will be converted into cash or used by the business within a relatively short period of time. Uptown deducts the amount of Allowance for Doubtful Accounts from the total of accounts, notes, and interest receivable because it estimates that only $54,800 of $57,800 will be collected in cash.

Uptown Cabinet Corp.
Balance Sheet
As of December 31, 2025

Assets			
Current assets			
Cash			$ 1,200
Notes receivable	$16,000		
Accounts receivable	41,000		
Interest receivable	800	$57,800	
Less: Allowance for doubtful accounts		3,000	54,800
Inventory			40,000
Prepaid insurance			540
Prepaid rent			500
Total current assets			97,040
Property, plant, and equipment			
Equipment		67,000	
Less: Accumulated depreciation—equipment		18,700	
Total property, plant, and equipment			48,300
Total assets			$145,340
Liabilities and Stockholders' Equity			
Current liabilities			
Notes payable		$20,000	
Accounts payable		13,500	
Property taxes payable		2,000	
Income taxes payable		3,440	
Total current liabilities			$ 38,940
Long term liabilities			
Bonds payable, due June 30, 2033			30,000
Total liabilities			68,940
Stockholders' equity			
Common stock, $5.00 par value, issued and outstanding, 10,000 shares		50,000	
Retained earnings		26,400	
Total stockholders' equity			76,400
Total liabilities and stockholders' equity			$145,340

ILLUSTRATION 2.46 Balance Sheet for a Merchandising Company

- In the property, plant, and equipment section, Uptown deducts the Accumulated Depreciation—Equipment from the cost of the equipment. The difference represents the book or carrying value of the equipment.

- The balance sheet shows property taxes payable as a current liability because it is an obligation that is payable within a year. The balance sheet also shows other short-term liabilities such as accounts payable.
- The bonds payable, due in 2033, are long-term liabilities. As a result, the balance sheet shows the account in a separate section. (The company paid interest on the bonds on December 31.)

Because Uptown is a corporation, the capital section of the balance sheet, called the stockholders' equity section in the illustration, differs somewhat from the capital section for a proprietorship. Total stockholders' equity consists of the common stock, which is the original investment by stockholders, and the earnings retained in the business. *For homework purposes, unless instructed otherwise, prepare an unclassified balance sheet.*

Closing Entries

Uptown makes closing entries in its general journal as follows.

December 31, 2025

Sales Revenue	400,000	
Interest Revenue	800	
Income Summary		400,800
(To close revenues to Income Summary)		
Income Summary	388,600	
Cost of Goods Sold		316,000
Salaries and Wages Expense (sales)		20,000
Advertising Expense		10,200
Salaries and Wages Expense (general)		19,000
Depreciation Expense		6,700
Rent Expense		4,300
Property Tax Expense		5,300
Bad Debt Expense		1,000
Telephone and Internet Expense		600
Insurance Expense		360
Interest Expense		1,700
Income Tax Expense		3,440
(To close expenses to Income Summary)		
Income Summary ($400,800 − $388,600)	12,200	
Retained Earnings		12,200
(To close Income Summary to Retained Earnings)		
Retained Earnings	2,000	
Dividends		2,000
(To close Dividends to Retained Earnings)		

APPENDIX **2A**

Cash-Basis Accounting versus Accrual-Basis Accounting

LEARNING OBJECTIVE *6

Differentiate the cash basis of accounting from the accrual basis of accounting.

Most companies use **accrual-basis accounting**: They recognize revenue when the performance obligation is satisfied and expenses in the period incurred, without regard to the time of receipt or payment of cash.

Some small companies and the average individual taxpayer, however, use a strict or modified cash-basis approach. Under the **strict cash basis**, companies record revenue only when they receive cash. They record expenses only when they disperse cash.

- Determining income on the cash basis rests upon collecting revenue and paying expenses.
- The cash basis ignores two principles: the revenue recognition principle and the expense recognition principle. Consequently, cash-basis financial statements are not in conformity with GAAP.

An illustration will help clarify the differences between accrual-basis and cash-basis accounting.

Assume that Quality Contractor signs an agreement to construct a garage for $22,000. In January, Quality begins construction, and purchases $18,000 of supplies on account, and by the end of January delivers a finished garage to the buyer. In February, Quality collects $22,000 cash from the customer. In March, Quality pays the $18,000 due to their vendor. **Illustrations 2A.1** and **2A.2** show the net incomes for each month under cash-basis accounting and accrual-basis accounting, respectively.

ILLUSTRATION 2A.1 Income Statements—Cash Basis

Quality Contractor
Income Statement—Cash Basis
For the Month of

	January	February	March	Total
Cash receipts	$–0–	$22,000	$ –0–	$22,000
Cash payments	–0–	–0–	18,000	18,000
Net income (loss)	$–0–	$22,000	$(18,000)	$ 4,000

ILLUSTRATION 2A.2 Income Statements—Accrual Basis

Quality Contractor
Income Statement—Accrual Basis
For the Month of

	January	February	March	Total
Revenues	$22,000	$–0–	$–0–	$22,000
Expenses	18,000	–0–	–0–	18,000
Net income (loss)	$ 4,000	$–0–	$–0–	$ 4,000

For the three months combined, total net income is the same under both cash-basis accounting and accrual-basis accounting. The difference is in the **timing** of revenues and expenses. The basis of accounting also affects the balance sheet. **Illustrations 2A.3** and **2A.4** show Quality's balance sheets at each month-end under the cash basis and the accrual basis, respectively.

ILLUSTRATION 2A.3 Balance Sheets—Cash Basis

Quality Contractor
Balance Sheet—Cash Basis
As of

	January 31	February 28	March 31
Assets			
Cash	$–0–	$22,000	$4,000
Total assets	$–0–	$22,000	$4,000
Liabilities and owners' equity			
Owners' equity	$–0–	$22,000	$4,000
Total liabilities and owners' equity	$–0–	$22,000	$4,000

ILLUSTRATION 2A.4 Balance Sheets—Accrual Basis

Quality Contractor
Balance Sheet—Accrual Basis
As of

	January 31	February 28	March 31
Assets			
Cash	$ –0–	$22,000	$4,000
Accounts receivable	22,000	–0–	–0–
Total assets	$22,000	$22,000	$4,000
Liabilities and owners' equity			
Accounts payable	$18,000	$18,000	$ –0–
Owners' equity	4,000	4,000	4,000
Total liabilities and owners' equity	$22,000	$22,000	$4,000

Analysis of Quality's income statements and balance sheets shows the ways in which cash-basis accounting is inconsistent with basic accounting theory:

1. The cash basis understates revenues and assets from the construction and delivery of the garage in January. It ignores the $22,000 of accounts receivable, representing a near-term future cash inflow.
2. The cash basis understates expenses incurred with the construction of the garage and the liability outstanding at the end of January. It ignores the $18,000 of accounts payable, representing a near-term future cash outflow.
3. The cash basis understates owners' equity in January by not recognizing the revenues and the asset until February. It also overstates owners' equity in February by not recognizing the expenses and the liability until March.

In short, cash-basis accounting violates the accrual concept underlying financial reporting.

The **modified cash basis** is a mixture of the cash basis and the accrual basis. It is based on the strict cash basis but with modifications that have substantial support, such as capitalizing and depreciating plant assets or recording inventory. This method is often followed by professional services firms (doctors, lawyers, accountants, and consultants) and by retail, real estate, and agricultural operations.[1]

Conversion from Cash Basis to Accrual Basis

Not infrequently, companies want to convert a cash basis or a modified cash basis set of financial statements to the accrual basis for presentation to investors and creditors. To illustrate this conversion, assume that Dr. Diane Windsor, like many small business owners, keeps her accounting records on a cash basis. In 2025, Dr. Windsor received $300,000 from her patients and paid $170,000 for operating expenses, resulting in an excess of cash receipts over disbursements of $130,000 ($300,000 − $170,000). At January 1 and December 31, 2025, she has accounts receivable, unearned service revenue, accrued liabilities, and prepaid expenses as shown in **Illustration 2A.5**.

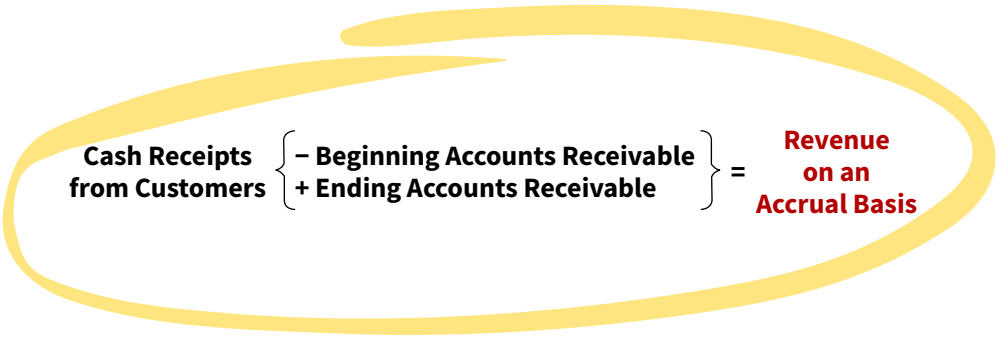
[1]Companies in the following situations might use a cash or modified cash basis.
1. A company that is primarily interested in cash flows (e.g., a group of physicians who distributes cash-basis earnings for salaries and bonuses).
2. A company that has a limited number of financial statement users (small, closely held company with little or no debt).
3. A company that has operations that are relatively straightforward (small amounts of inventory, long-term assets, or long-term debt).

	January 1, 2025	December 31, 2025
Accounts receivable	$12,000	$9,000
Unearned service revenue	–0–	4,000
Accrued liabilities	2,000	5,500
Prepaid expenses	1,800	2,700

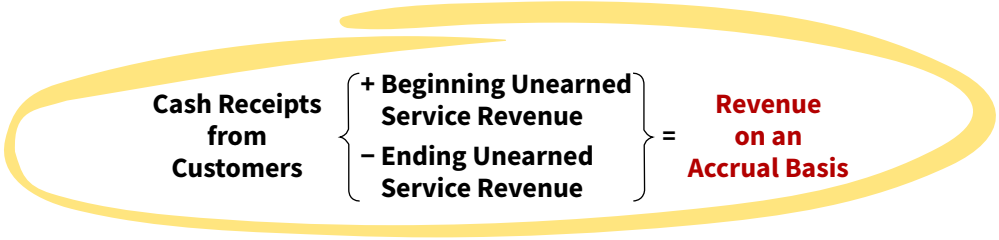
ILLUSTRATION 2A.5 Financial Information Related to Dr. Diane Windsor

Service Revenue Computation

To convert the amount of cash received from patients to service revenue on an accrual basis, we must consider changes in accounts receivable and unearned service revenue during the year. Accounts receivable at the beginning of the year represents revenues recognized last year that are collected this year. Ending accounts receivable indicates revenues recognized this year that are not yet collected. Therefore, to compute revenue on an accrual basis, we subtract beginning accounts receivable and add ending accounts receivable, as the following formula shows.



Similarly, beginning unearned service revenue represents cash received last year for revenues recognized this year. Ending unearned service revenue results from collections this year that will be recognized as revenue next year. Therefore, to compute revenue on an accrual basis, we add beginning unearned service revenue and subtract ending unearned service revenue, as the following formula shows.


Cash Receipts from Customers
+ Beginning Unearned Service Revenue
– Ending Unearned Service Revenue
=
Revenue on an Accrual Basis

Therefore, for Dr. Windsor's dental practice, to convert cash collected from customers to service revenue on an accrual basis, we would make the computations shown in **Illustration 2A.6**.

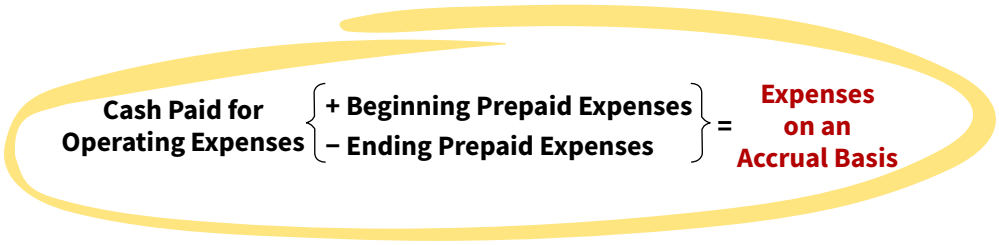
Cash receipts from customers		$300,000
– Beginning accounts receivable	$(12,000)	
+ Ending accounts receivable	9,000	
+ Beginning unearned service revenue	–0–	
– Ending unearned service revenue	(4,000)	(7,000)
Service revenue (accrual)		$293,000

ILLUSTRATION 2A.6 Conversion of Cash Receipts to Service Revenue

Operating Expense Computation

To convert cash paid for operating expenses during the year to operating expenses on an accrual basis, we must consider changes in prepaid expenses and accrued liabilities. First, we need to recognize as this year's expenses the amount of beginning prepaid expenses. (The cash payment for these occurred last year.) Therefore, to arrive at operating expense on an accrual basis, we add the beginning prepaid expenses balance to cash paid for operating expenses.

Conversely, ending prepaid expenses result from cash payments made this year for expenses to be reported next year. (Under the accrual basis, Dr. Windsor would have deferred recognizing these payments as expenses until a future period.) To convert these cash payments to operating expenses on an accrual basis, we deduct ending prepaid expenses from cash paid for expenses, as the following formula shows.



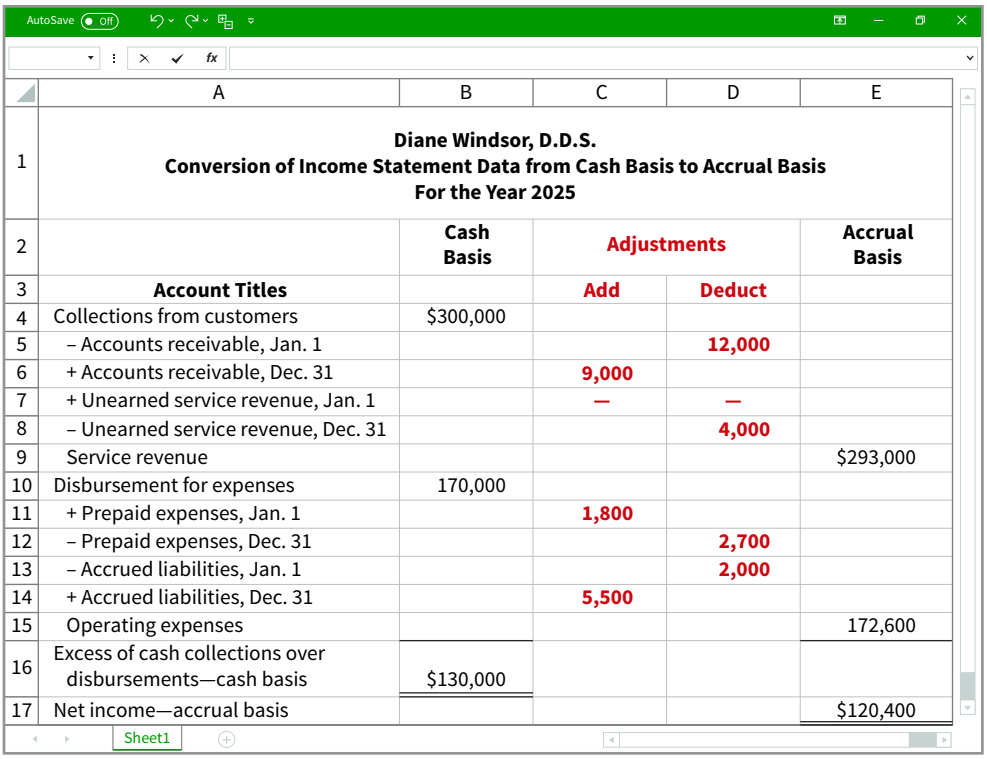
Similarly, beginning accrued liabilities result from expenses recognized last year that require cash payments this year. Ending accrued liabilities relate to expenses recognized this year that have not been paid. To arrive at expenses on an accrual basis, we deduct beginning accrued liabilities and add ending accrued liabilities to cash paid for expenses, as the following formula shows.

Therefore, for Dr. Windsor's dental practice, to convert cash paid for operating expenses to operating expenses on an accrual basis, we would make the computations shown in Illustration 2A.7.

ILLUSTRATION 2A.7 Conversion of Cash Paid to Operating Expenses

Cash paid for operating expenses		$170,000
+ Beginning prepaid expenses	$ 1,800	
– Ending prepaid expenses	(2,700)	
– Beginning accrued liabilities	(2,000)	
+ Ending accrued liabilities	5,500	2,600
Operating expenses (accrual)		$172,600

This entire conversion can be completed in worksheet form, as shown in Illustration 2A.8.



	A	B	C	D	E
1	**Diane Windsor, D.D.S. Conversion of Income Statement Data from Cash Basis to Accrual Basis For the Year 2025**				
2		**Cash Basis**	**Adjustments**		**Accrual Basis**
3	**Account Titles**		**Add**	**Deduct**	
4	Collections from customers	$300,000			
5	– Accounts receivable, Jan. 1			**12,000**	
6	+ Accounts receivable, Dec. 31		**9,000**		
7	+ Unearned service revenue, Jan. 1		**—**	**—**	
8	– Unearned service revenue, Dec. 31			**4,000**	
9	Service revenue				$293,000
10	Disbursement for expenses	170,000			
11	+ Prepaid expenses, Jan. 1		**1,800**		
12	– Prepaid expenses, Dec. 31			**2,700**	
13	– Accrued liabilities, Jan. 1			**2,000**	
14	+ Accrued liabilities, Dec. 31		**5,500**		
15	Operating expenses				172,600
16	Excess of cash collections over disbursements—cash basis	$130,000			
17	Net income—accrual basis				$120,400

ILLUSTRATION 2A.8 Conversion of Statement of Cash Receipts and Disbursements to Income Statement

Using this approach, we adjust collections and disbursements on a cash basis to revenue and expense on an accrual basis, to arrive at accrual net income. In any conversion from the cash basis to the accrual basis, depreciation or amortization is an additional expense in arriving at net income on an accrual basis.

Theoretical Weaknesses of the Cash Basis

The cash basis reports exactly when cash is received and when cash is disbursed. To many people, that information represents something concrete. Cash is king, right? Does it make sense to invent something, design it, produce it, market and sell it, if you aren't going to get cash for it in the end? Many frequently say, "Cash is the real bottom line" and "Cash is the oil that lubricates the economy." If so, then what is the merit of accrual accounting?

- **Today's economy is considerably more driven by credit transactions than by cash.** The accrual basis, not the cash basis, recognizes all aspects of the credit phenomenon.
- **Investors, creditors, and other decision-makers seek timely information about a company's future cash flows.** Accrual-basis accounting provides this information by reporting the cash inflows and outflows associated with earnings activities as soon as these companies can estimate these cash flows with an acceptable degree of certainty.

Receivables and payables are forecasters of future cash inflows and outflows. In other words, accrual-basis accounting aids in predicting future cash flows by reporting transactions and other events with cash consequences at the time the transactions and events occur, rather than when the cash is received and paid.

APPENDIX **2B**

Using Reversing Entries

LEARNING OBJECTIVE *7

Identify adjusting entries that may be reversed.

Use of reversing entries simplifies the recording of transactions in the next accounting period. The use of reversing entries, however, does not change the amounts reported in the financial statements for the previous period.

Illustration of Reversing Entries—Accruals

A company most often uses reversing entries to reverse two types of adjusting entries: accrued revenues and accrued expenses. To illustrate the optional use of reversing entries for accrued expenses, we use the following transaction and adjustment data.

1. October 24 (initial salaries and wages entry): Paid $4,000 of salaries and wages incurred between October 10 and October 24.
2. October 31 (adjusting entry): Incurred salaries and wages between October 25 and October 31 of $1,200, to be paid in the November 8 payroll.
3. November 8 (subsequent salaries and wages entry): Paid salaries and wages of $2,500. Of this amount, $1,200 applied to accrued salaries and wages payable at October 31 and $1,300 to salaries and wages payable for November 1 through November 8.

Illustration 2B.1 shows the comparative entries.

ILLUSTRATION 2B.1 Comparison of Entries for Accruals, with and without Reversing Entries

Reversing Entries Not Used				Reversing Entries Used			
			Initial Salary Entry				
Oct. 24	Salaries and Wages Expense	4,000		Oct. 24	Salaries and Wages Expense	4,000	
	Cash		4,000		Cash		4,000
			Adjusting Entry				
Oct. 31	Salaries and Wages Expense	1,200		Oct. 31	Salaries and Wages Expense	1,200	
	Salaries and Wages Payable		1,200		Salaries and Wages Payable		1,200
			Closing Entry				
Oct. 31	Income Summary	5,200		Oct. 31	Income Summary	5,200	
	Salaries and Wages Expense		5,200		Salaries and Wages Expense		5,200
			Reversing Entry				
Nov. 1	No entry is made.			Nov. 1	Salaries and Wages Payable	1,200	
					Salaries and Wages Expense		1,200
			Subsequent Salary Entry				
Nov. 8	Salaries and Wages Payable	1,200		Nov. 8	Salaries and Wages Expense	2,500	
	Salaries and Wages Expense	1,300			Cash		2,500
	Cash		2,500				

The comparative entries show that the first three entries are the same whether or not the company uses reversing entries. The last two entries differ.

- The November 1 reversing entry eliminates the $1,200 balance in Salaries and Wages Payable, created by the October 31 adjusting entry.
- The reversing entry also creates a $1,200 credit balance in the Salaries and Wages Expense account.

Salaries and Wages Expense

		11/1	1,200
11/8	2,500		
	1,300		

Salaries and Wages Payable

		10/31	1,200
11/1	1,200		

As you know, it is unusual for an expense account to have a credit balance. However, the balance is correct in this instance. Why? Because the company will debit the entire amount of the first salaries and wages payment in the new accounting period to Salaries and Wages Expense. This debit eliminates the credit balance. The resulting debit balance in the expense account will equal the salaries and wages expense incurred in the new accounting period ($1,300 in this example).

When a company makes reversing entries, it debits all cash payments of expenses to the related expense account. This means that on November 8 (and every payday), the company debits Salaries and Wages Expense for the amount paid without regard to the existence of any accrued salaries and wages payable. Repeating the same entry simplifies the recording process in an accounting system.

Illustration of Reversing Entries—Deferrals

Up to this point, we assumed the recording of all deferrals as prepaid expense or unearned revenue. In some cases, though, a company records deferrals directly in expense or revenue accounts. When this occurs, a company may also reverse deferrals.

To illustrate the use of reversing entries for prepaid expenses, we use the following transaction and adjustment data.

1. December 10 (initial entry): Purchased $20,000 of office supplies with cash.
2. December 31 (adjusting entry): Determined that $5,000 of office supplies are on hand.

Illustration 2B.2 shows the comparative entries.

ILLUSTRATION 2B.2 Comparison of Entries for Deferrals, with and without Reversing Entries

Reversing Entries Not Used				Reversing Entries Used			
Initial Purchase of Supplies Entry							
Dec. 10	Supplies	20,000		Dec. 10	Supplies Expense	20,000	
	Cash		20,000		Cash		20,000
Adjusting Entry							
Dec. 31	Supplies Expense	15,000		Dec. 31	Supplies	5,000	
	Supplies		15,000		Supplies Expense		5,000
Closing Entry							
Dec. 31	Income Summary	15,000		Dec. 31	Income Summary	15,000	
	Supplies Expense		15,000		Supplies Expense		15,000
Reversing Entry							
Jan. 1	No entry			Jan. 1	Supplies Expense	5,000	
					Supplies		5,000

After the adjusting entry on December 31 (regardless of whether using reversing entries), the asset account Supplies shows a balance of $5,000, and Supplies Expense shows a balance of $15,000. If the company initially debits Supplies Expense when it purchases the supplies, it then makes a reversing entry to return to the expense account the cost of unconsumed supplies. The company then continues to debit Supplies Expense for additional purchases of supplies during the next period.

Deferrals are generally entered in real accounts (assets and liabilities), thus making reversing entries unnecessary.

- This approach is used because it is advantageous for items that a company needs to apportion over several periods (e.g., supplies and parts inventories).
- However, for other items that do not follow this regular pattern and that may or may not involve two or more periods, a company ordinarily enters them initially in revenue or expense accounts. The revenue and expense accounts may not require adjusting, and the company thus systematically closes them to Income Summary.

Using the nominal accounts adds consistency to the accounting system. It also makes the recording more efficient, particularly when a large number of such transactions occur during the year. For example, the bookkeeper knows to expense invoice items (except for capital asset acquisitions). He or she need not worry whether an item will result in a prepaid expense at the end of the period because the company will make adjustments at the end of the period.

Summary of Reversing Entries

We summarize guidelines for reversing entries as follows.

1. All accruals should be reversed.
2. All deferrals for which a company debited or credited the original cash transaction to an expense or revenue account should be reversed.
3. Adjusting entries for depreciation and bad debts are not reversed.

Recognize that reversing entries do not have to be used. Therefore, some accountants avoid them entirely.

APPENDIX **2C**

Using a Worksheet: The Accounting Cycle Revisited

LEARNING OBJECTIVE *8

Prepare a 10-column worksheet.

In this appendix, we provide an additional illustration of the end-of-period steps in the accounting cycle and illustrate the use of a worksheet (usually in an electronic spreadsheet) in this process. Using a **worksheet** (spreadsheet) often facilitates the end-of-period (monthly, quarterly, or annually) accounting and reporting process. Use of a worksheet helps a company prepare the financial statements on a more timely basis. How? With a worksheet; a company need not wait until it journalizes and posts the adjusting and closing entries.

A company prepares a worksheet either on columnar paper or within a computer spreadsheet. In either form, a company uses the worksheet to adjust account balances and to prepare financial statements.

The worksheet does not replace the financial statements.

- Instead, it is an informal device for accumulating and sorting information needed for the financial statements.
- Completing the worksheet provides considerable assurance that a company properly handled all of the details related to the end-of-period accounting and statement preparation.

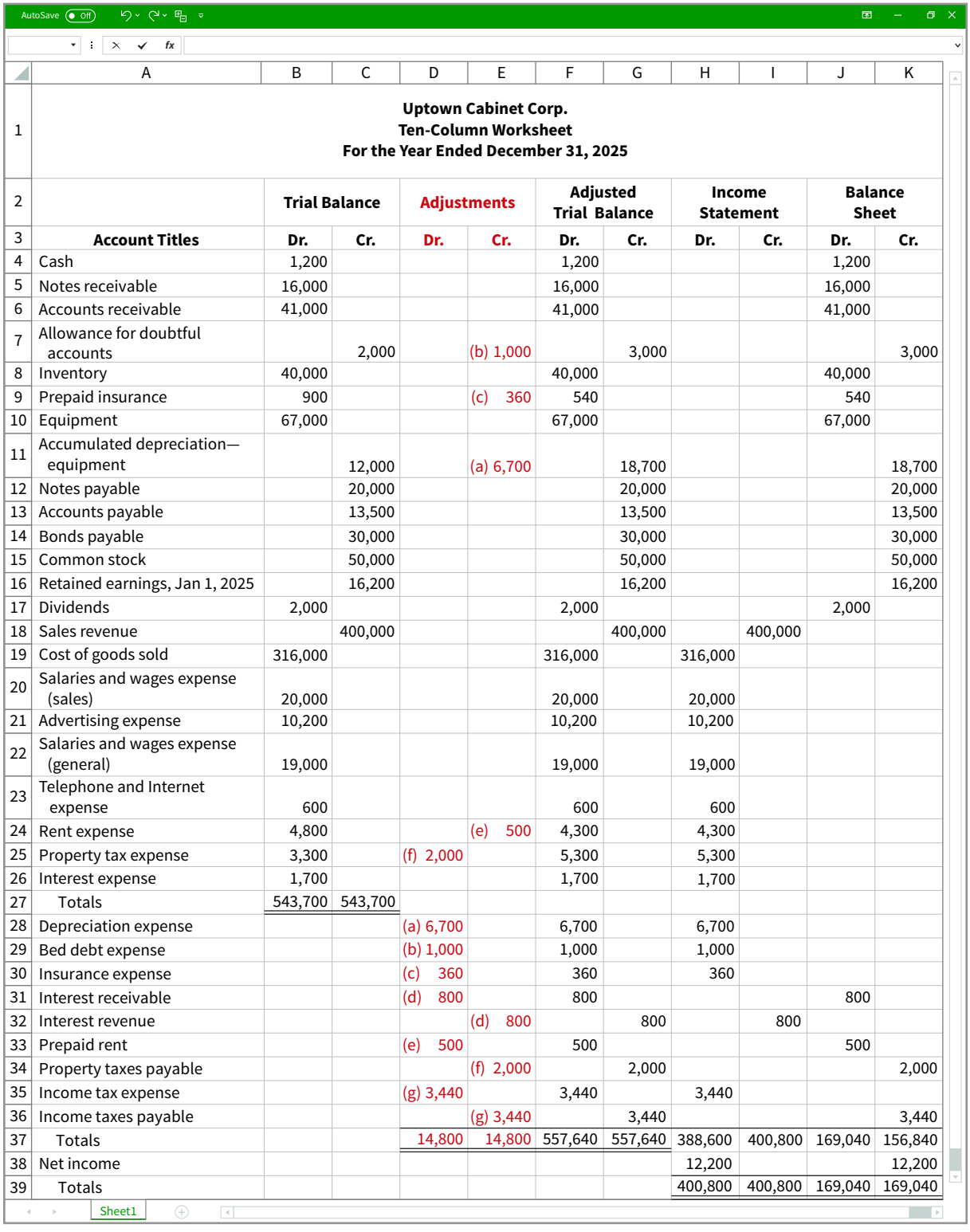
The 10-column worksheet in Illustration 2C.1 provides columns for the first trial balance, adjustments, adjusted trial balance, income statement, and balance sheet.

Worksheet Columns

Trial Balance Columns

Uptown Cabinet Corp., shown in Illustration 2C.1, obtains data for the trial balance from its ledger balances at December 31. The amount for Inventory, $40,000, is the year-end inventory amount, which results from the application of a perpetual inventory system.

ILLUSTRATION 2C.1 Use of a Worksheet



Uptown Cabinet Corp.
Ten-Column Worksheet
For the Year Ended December 31, 2025

		Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Account Titles	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
4	Cash	1,200				1,200				1,200	
5	Notes receivable	16,000				16,000				16,000	
6	Accounts receivable	41,000				41,000				41,000	
7	Allowance for doubtful accounts		2,000		(b) 1,000		3,000				3,000
8	Inventory	40,000				40,000				40,000	
9	Prepaid insurance	900			(c) 360	540				540	
10	Equipment	67,000				67,000				67,000	
11	Accumulated depreciation—equipment		12,000		(a) 6,700		18,700				18,700
12	Notes payable		20,000				20,000				20,000
13	Accounts payable		13,500				13,500				13,500
14	Bonds payable		30,000				30,000				30,000
15	Common stock		50,000				50,000				50,000
16	Retained earnings, Jan 1, 2025		16,200				16,200				16,200
17	Dividends	2,000				2,000				2,000	
18	Sales revenue		400,000				400,000		400,000		
19	Cost of goods sold	316,000				316,000		316,000			
20	Salaries and wages expense (sales)	20,000				20,000		20,000			
21	Advertising expense	10,200				10,200		10,200			
22	Salaries and wages expense (general)	19,000				19,000		19,000			
23	Telephone and Internet expense	600				600		600			
24	Rent expense	4,800			(e) 500	4,300		4,300			
25	Property tax expense	3,300		(f) 2,000		5,300		5,300			
26	Interest expense	1,700				1,700		1,700			
27	Totals	543,700	543,700								
28	Depreciation expense			(a) 6,700		6,700		6,700			
29	Bed debt expense			(b) 1,000		1,000		1,000			
30	Insurance expense			(c) 360		360		360			
31	Interest receivable			(d) 800		800				800	
32	Interest revenue				(d) 800		800		800		
33	Prepaid rent			(e) 500		500				500	
34	Property taxes payable				(f) 2,000		2,000				2,000
35	Income tax expense			(g) 3,440		3,440		3,440			
36	Income taxes payable				(g) 3,440		3,440				3,440
37	Totals			14,800	14,800	557,640	557,640	388,600	400,800	169,040	156,840
38	Net income							12,200			12,200
39	Totals							400,800	400,800	169,040	169,040

Adjustments Columns

After Uptown enters all adjustment data on the worksheet, it establishes the equality of the adjustment columns. It then extends the balances in all accounts to the adjusted trial balance columns.

Adjustments Entered on the Worksheet

Items (a) through (g) below serve as the basis for the adjusting entries made in the worksheet for Uptown shown in Illustration 2C.1.

a. Depreciation of equipment at the rate of 10% per year based on original cost of $67,000.
b. Estimated bad debts of $1,000, based on an aging of Accounts Receivable.
c. Insurance expired during the year $360.
d. Interest accrued on notes receivable as of December 31, $800.
e. The Rent Expense account contains $500 rent paid in advance, which is applicable to next year.
f. Property taxes accrued December 31, $2,000.
g. Income taxes payable estimated $3,440.

The adjusting entries shown on the December 31, 2025, worksheet are as follows.

a.	Depreciation Expense	6,700	
	Accumulated Depreciation—Equipment		6,700
b.	Bad Debt Expense	1,000	
	Allowance for Doubtful Accounts		1,000
c.	Insurance Expense	360	
	Prepaid Insurance		360
d.	Interest Receivable	800	
	Interest Revenue		800
e.	Prepaid Rent	500	
	Rent Expense		500
f.	Property Tax Expense	2,000	
	Property Taxes Payable		2,000
g.	Income Tax Expense	3,440	
	Income Taxes Payable		3,440

Uptown Cabinet transfers the adjusting entries to the Adjustments columns of the worksheet, often designating each by letter. The trial balance lists any new accounts resulting from the adjusting entries, as illustrated on the worksheet. (For example, see the accounts listed in rows 28 through 36 in Illustration 2C.1.) Uptown then totals and balances the Adjustments columns.

Adjusted Trial Balance

The adjusted trial balance shows the balance of all accounts after adjustment at the end of the accounting period. For example, Uptown adds the $2,000 shown opposite the Allowance for Doubtful Accounts in the Trial Balance Cr. column to the $1,000 in the Adjustments Cr. column. The company then extends the $3,000 total to the Adjusted Trial Balance Cr. column. Similarly, Uptown reduces the $900 debit opposite Prepaid Insurance by the $360 credit in the Adjustments column. The result, $540, is shown in the Adjusted Trial Balance Dr. column.

Income Statement and Balance Sheet Columns

Uptown extends all the debit items in the Adjusted Trial Balance columns into the Income Statement or Balance Sheet columns to the right. It similarly extends all the credit items.

The next step is to total the Income Statement columns. Uptown needs the amount of net income or loss for the period to balance the debit and credit columns. The net income of $12,200 is shown in the Income Statement Dr. column because revenues exceeded expenses by that amount.

Uptown then balances the Income Statement columns. The company also enters the net income of $12,200 in the Balance Sheet Cr. column as an increase in retained earnings.

Preparing Financial Statements from a Worksheet

The worksheet provides the information needed for preparation of the financial statements without reference to the ledger or other records. In addition, the worksheet sorts that data into appropriate columns, which facilitates the preparation of the statements. The financial statements of Uptown Cabinet are shown in Illustrations 2.44 to 2.46.

Review and Practice

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Review of Basic Terminology

Financial accounting rests on a set of concepts (discussed in Chapter 1) for identifying, recording, classifying, and interpreting transactions and other events relating to enterprises. You therefore need to understand the following **basic terminology employed in collecting accounting data**.

- **Account.** A systematic arrangement that shows the effect of transactions and other events on a specific element (asset, liability, and so on). Companies keep a separate account for each asset, liability, revenue, and expense, and for capital (stockholders' equity). Because the format of an account often resembles the letter T, it is sometimes referred to as a **T-account** (see Illustration 2.3).
- **Adjusting Entries.** Entries made at the end of an accounting period to bring all accounts up to date on an accrual basis, so that the company can prepare correct financial statements.

- **Closing Entries.** The formal process by which the enterprise reduces all nominal accounts to zero and determines and transfers the net income or net loss to a stockholders' equity account. Also known as "closing the ledger," "closing the books," or merely "closing."
- **Event.** A happening of consequence. An event generally is the source or cause of changes in assets, liabilities, and equity. Events may be external or internal.
- **Financial Statements.** Statements that reflect the collection, tabulation, and final summarization of the accounting data. Four statements are involved. (1) The **balance sheet** shows the financial condition of the enterprise at the end of a period. (2) The **income statement** measures the results of operations during the period. (3) The **statement of cash flows** reports the cash provided and used by operating, investing, and financing activities during the period. (4) The **retained earnings statement** reconciles the balance of the retained earnings account from the beginning to the end of the period.
- **Journal.** The "book of original entry" where the company initially records transactions and selected other events. Various amounts are transferred from the book of original entry, the journal, to the ledger. Entering transaction data in the journal is known as **journalizing**.
- **Ledger.** The book (or computer printouts) containing the accounts. A **general ledger** is a collection of all the asset, liability, stockholders' equity, revenue, and expense accounts. A **subsidiary ledger** contains the details related to a given general ledger account.
- **Posting.** The process of transferring the essential facts and figures from the book of original entry to the ledger accounts.
- **Real and Nominal Accounts.** **Real** (permanent) **accounts** are asset, liability, and equity accounts; they appear on the balance sheet. **Nominal** (temporary) **accounts** are revenue, expense, and dividend accounts; except for dividends, they appear on the income statement. Companies periodically close nominal accounts; they do not close real accounts.
- **Transaction**. An **external event** involving a transfer or exchange between two or more entities.
- **Trial Balance.** The list of all open accounts in the ledger and their balances. The trial balance prepared immediately after all adjustments have been posted is called an **adjusted trial balance**. A trial balance prepared immediately after closing entries have been posted is called a **post-closing** (or **after-closing**) **trial balance**. Companies may prepare a trial balance at any time.

Learning Objectives Review

1 Explain the basic concepts of an accounting information system.

Using **double-entry rules**, the left side of any account is the debit side; the right side is the credit side. All asset and expense accounts are increased on the left or debit side and decreased on the right or credit side. Conversely, all liability and revenue accounts are increased on the right or credit side and decreased on the left or debit side. Stockholders' equity accounts, Common Stock and Retained Earnings, are increased on the credit side. Dividends is increased on the debit side.

The **basic steps in the accounting cycle** are (1) identifying and measuring transactions and other events, (2) journalizing, (3) posting, (4) preparing an unadjusted trial balance, (5) making adjusting entries, (6) preparing an adjusted trial balance, (7) preparing financial statements, (8) closing, and (9) preparing a post-closing trial balance (optional).

2 Record and summarize accounting transactions.

The simplest journal form chronologically lists transactions and events expressed in terms of debits and credits to particular accounts. The items entered in a general journal must be transferred (posted) to the general ledger. Companies should prepare an unadjusted trial balance at the end of a given period after they have recorded the entries in the journal and posted them to the ledger.

3 Identify and prepare adjusting entries.

Adjustments achieve a proper recognition of revenues and expenses, so as to determine net income for the current period and to achieve an accurate statement of end-of-the-period balances in assets, liabilities, and equity accounts. The major types of adjusting entries are deferrals (prepaid expenses and unearned revenues) and accruals (accrued revenues and accrued expenses).

4 Prepare financial statements from the adjusted trial balance and prepare closing entries.

Companies can **prepare financial statements** directly from the adjusted trial balance. The income statement is prepared from the revenue and expense accounts. The retained earnings statement is prepared from the retained earnings account, dividends, and net income (or net loss). The balance sheet is prepared from the asset, liability, and equity accounts.

In the **closing process**, the company transfers all of the revenue and expense account balances (income statement items) to a clearing account called Income Summary, which is used only at the end of the fiscal year. Revenues and expenses are matched in the Income Summary account. The net result of this matching represents the net income or net loss for the period. That amount is then transferred to an equity account (Retained Earnings for a corporation and capital accounts for proprietorships and partnerships).

5 Prepare financial statements for a merchandising company.

The financial statements for a merchandiser differ from those for a service company, as a merchandiser must account for gross profit on sales. The accounting cycle, however, is performed the same.

***6 Differentiate the cash basis of accounting from the accrual basis of accounting.**

The cash basis of accounting records revenues when cash is received and expenses when cash is paid. Cash-basis accounting is not in conformity with GAAP. The accrual basis recognizes revenue when the performance obligation is satisfied and expenses in the period incurred, without regard to the time of the receipt or payment of cash. Accrual-basis accounting is theoretically preferable because it provides information about future cash inflows and outflows associated with earnings activities as soon as companies can estimate these cash flows with an acceptable degree of certainty.

***7 Identify adjusting entries that may be reversed.**

Reversing entries are most often used to reverse two types of adjusting entries: accrued revenues and accrued expenses. Deferrals may also be reversed if the initial entry to record the transaction is made to an expense or revenue account.

***8 Prepare a 10-column worksheet.**

The 10-column worksheet provides columns for the unadjusted trial balance, adjustments, adjusted trial balance, income statement, and balance sheet. The worksheet does not replace the financial statements. Instead, it is an informal device for accumulating and sorting information needed for the financial statements.

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Exercises, Problems, Problem Solution Walkthrough Videos, Data Analytics Activities, and many more assessment tools and resources are available for practice in Wiley Course Resources.

Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. Give an example of a transaction that results in:
   - **a.** A decrease in an asset and a decrease in a liability.
   - **b.** A decrease in one asset and an increase in another asset.
   - **c.** A decrease in one liability and an increase in another liability.
2. Do the following events represent business transactions? Explain your answer in each case.
   - **a.** A computer is purchased on account.
   - **b.** A customer returns merchandise and is given credit on account.
   - **c.** A prospective employee is interviewed.
   - **d.** The owner of the business withdraws cash from the business for personal use.
   - **e.** Merchandise is ordered for delivery next month.
3. Name the accounts debited and credited for each of the following transactions.
   - **a.** Billing a customer for work done.
   - **b.** Receipt of cash from customer on account.
   - **c.** Purchase of office supplies on account.
   - **d.** Purchase of 15 gallons of gasoline for the delivery truck for cash.
4. Why are revenue and expense accounts called temporary or nominal accounts?
5. Andrea Pafko, a fellow student, contends that the double-entry system means that each transaction must be recorded twice. Is Andrea correct? Explain.
6. Is it necessary that a trial balance be prepared periodically? What purpose does it serve?
7. Indicate whether each of the following items is a real or nominal account and whether it appears in the balance sheet or the income statement.
   - **a.** Prepaid Rent.
   - **b.** Salaries and Wages Payable.
   - **c.** Inventory.
   - **d.** Accumulated Depreciation—Equipment.
   - **e.** Equipment.
   - **f.** Service Revenue.
   - **g.** Salaries and Wages Expense.
   - **h.** Supplies.
8. Employees are paid every Saturday for the preceding work week. If a balance sheet is prepared on Wednesday, December 31, what does the amount of wages earned during the first three days of the week (12/29, 12/30, 12/31) represent? Explain.

9. (a) How are the components of revenues and expenses different for a merchandising company? (b) Explain the income measurement process of a merchandising company.

10. What differences are there between the trial balance before closing and the trial balance after closing with respect to the following accounts?

a. Accounts Payable.
b. Expense accounts.
c. Revenue accounts.
d. Retained Earnings account.
e. Cash.

11. What are adjusting entries and why are they necessary?

12. What are closing entries and why are they necessary?

13. Jay Hawk, maintenance supervisor for Boston Insurance Co., has purchased a riding lawnmower and accessories to be used in maintaining the grounds around corporate headquarters. He has sent the following information to the accounting department.

Cost of mower and accessories	$4,000	Date purchased	7/1/25
Estimated useful life	5 yrs	Monthly salary of groundskeeper	$1,100
Salvage value	$0	Estimated annual fuel cost	$150

Compute the amount of depreciation expense (related to the mower and accessories) that should be reported on Boston's December 31, 2025, income statement. Assume straight-line depreciation.

14. Midwest Enterprises made the following entry on December 31, 2025.

Interest Expense	10,000	
Interest Payable		10,000
(To record interest expense due on loan from Anaheim National Bank)		

What entry would Anaheim National Bank make regarding its outstanding loan to Midwest Enterprises? Explain why this must be the case.

***15.** Distinguish between cash-basis accounting and accrual-basis accounting. Why is accrual-basis accounting acceptable for most businesses and the cash-basis unacceptable in the preparation of an income statement and a balance sheet?

***16.** When salaries and wages expense for the year is computed, why are beginning accrued salaries and wages subtracted from, and ending accrued salaries and wages added to, salaries and wages paid during the year?

***17.** List two types of transactions that would receive different accounting treatment using (a) strict cash-basis accounting, and (b) a modified cash basis.

***18.** What are reversing entries, and why are they used?

***19.** "A worksheet is a permanent accounting record, and its use is required in the accounting cycle." Do you agree? Explain.

Brief Exercises

BE2.1 (LO 2) Transactions for Mehta Company for the month of May are presented below. Prepare journal entries for each of these transactions. (You may omit explanations.)

May	1	B.D. Mehta invests $4,000 cash in exchange for common stock in a small welding corporation.
	3	Buys equipment on account for $1,100.
	13	Pays $400 to landlord for May rent.
	21	Bills Noble Corp. $500 for welding work done.

BE2.2 (LO 2) Agazzi Repair Shop had the following transactions during the first month of business as a proprietorship. Journalize the transactions. (Omit explanations.)

Aug.	2	Invested $12,000 cash and $2,500 of equipment in the business.
	7	Purchased supplies on account for $500. (Debit asset account.)
	12	Performed services for clients, for which $1,300 was collected in cash and $670 was billed to the clients.
	15	Paid August rent $600.
	19	Counted supplies and determined that only $270 of the supplies purchased on August 7 are still on hand.

BE2.3 (LO 2, 3) On July 1, 2025, Crowe Co. pays $15,000 to Zubin Insurance Co. for a 3-year insurance policy. Both companies have fiscal years ending December 31. For Crowe Co., journalize the entry on July 1 and the adjusting entry on December 31.

BE2.4 (LO 2, 3) Using the data in BE2.3, journalize the entry on July 1 and the adjusting entry on December 31 for Zubin Insurance Co. Zubin uses the accounts Unearned Service Revenue and Service Revenue.

BE2.5 (LO 2, 3) Assume that on February 1, **Procter & Gamble (P&G)** paid $720,000 in advance for 2 years' insurance coverage. Prepare P&G's February 1 journal entry and the annual adjusting entry on June 30.

BE2.6 (LO 2, 3) LaBouche Corporation owns a warehouse. On November 1, it rented storage space to a lessee (tenant) for 3 months for a total cash payment of $2,400 received in advance. Prepare LaBouche's November 1 journal entry and the December 31 annual adjusting entry.

BE2.7 (LO 3) Dresser Company's weekly payroll, paid on Fridays, totals $8,000. Employees work a 5-day week. Prepare Dresser's adjusting entry on Wednesday, December 31, and the journal entry to record the $8,000 cash payment on Friday, January 2.

BE2.8 (LO 3) Included in Gonzalez Company's December 31 trial balance is a note receivable of $12,000. The note is a 4-month, 10% note dated October 1. Prepare Gonzalez's December 31 adjusting entry to record $300 of accrued interest, and the February 1 journal entry to record receipt of $12,400 from the borrower.

BE2.9 (LO 3) Prepare the following adjusting entries at August 31 for **Walgreens**.

a. Interest on notes payable of $300 is accrued.

b. Services performed but unbilled total $1,400.

c. Salaries and wages earned by employees of $700 have not been recorded.

d. Bad debt expense for year is $900.

Use the following account titles: Service Revenue, Accounts Receivable, Interest Expense, Interest Payable, Salaries and Wages Expense, Salaries and Wages Payable, Allowance for Doubtful Accounts, and Bad Debt Expense.

BE2.10 (LO 3) At the end of its first year of operations, the trial balance of Alonzo Company shows Equipment $30,000 and zero balances in Accumulated Depreciation—Equipment and Depreciation Expense. Depreciation for the year is estimated to be $2,000. Prepare the adjusting entry for depreciation at December 31, and indicate the balance sheet presentation for the equipment at December 31.

BE2.11 (LO 4) Side Kicks has year-end account balances of Sales Revenue $808,900, Interest Revenue $13,500, Cost of Goods Sold $556,200, Administrative Expenses $189,000, Income Tax Expense $35,100, and Dividends $18,900. Prepare the year-end closing entries.

***BE2.12 (LO 6)** Kelly Company had cash receipts from customers in 2025 of $142,000. Cash payments for operating expenses were $97,000. Kelly has determined that at January 1, accounts receivable was $13,000, and prepaid expenses were $17,500. At December 31, accounts receivable was $18,600, and prepaid expenses were $23,200. Compute (a) service revenue and (b) operating expenses.

***BE2.13 (LO 7)** Assume that **Best Buy** made a December 31 adjusting entry to debit Salaries and Wages Expense and credit Salaries and Wages Payable for $4,200 for one of its departments. On January 2, Best Buy paid the weekly payroll of $7,000. Prepare Best Buy's (a) January 1 reversing entry; (b) January 2 entry (assuming the reversing entry was prepared); and (c) January 2 entry (assuming the reversing entry was not prepared).

Exercises

E2.1 (LO 2) **(Transaction Analysis—Service Company)** Beverly Crusher is a licensed CPA. During the first month of operations of her business (a sole proprietorship), the following events and transactions occurred.

April	2	Invested $32,000 cash and equipment valued at $14,000 in the business.
	2	Hired an administrative assistant at a salary of $290 per week payable monthly.
	3	Purchased supplies on account $700. (Debit an asset account.)
	7	Paid office rent of $600 for the month.
	11	Completed a tax assignment and billed client $1,100 for services rendered. (Use Service Revenue account.)
	12	Received $3,200 advance on a management consulting engagement.
	17	Received cash of $2,300 for services completed for Ferengi Co.
	21	Paid insurance expense $110.
	30	Paid administrative assistant $1,160 for the month.
	30	A count of supplies indicated that $120 of supplies had been used.
	30	Purchased a new computer for $6,100 with personal funds. (The computer will be used exclusively for business purposes.)

Instructions

Journalize the transactions in the general journal. (Omit explanations.)

E2.2 (LO 2) (Corrected Trial Balance) The following trial balance of Wanda Landowska Company does not balance. Your review of the ledger reveals the following. (a) Each account had a normal balance. (b) The debit footings in Prepaid Insurance, Accounts Payable, and Property Tax Expense were each understated $100. (c) A transposition error was made in Accounts Receivable and Service Revenue; the correct balances for Accounts Receivable and Service Revenue are $2,750 and $6,690, respectively. (d) A debit posting to Advertising Expense of $300 was omitted. (e) A $1,500 cash drawing by the owner was debited to Owner's Capital and credited to Cash.

Wanda Landowska Company
Trial Balance
April 30, 2025

	Debit	Credit
Cash	$ 4,800	
Accounts Receivable	2,570	
Prepaid Insurance	700	
Equipment		$ 8,000
Accounts Payable		4,500
Property Taxes Payable	560	
Owner's Capital		11,200
Service Revenue	6,960	
Salaries and Wages Expense	4,200	
Advertising Expense	1,100	
Property Tax Expense		800
	$20,890	$24,500

Instruction

Prepare a correct trial balance.

E2.3 (LO 2) (Corrected Trial Balance) The following trial balance of Blues Traveler Corporation does not balance.

Blues Traveler Corporation
Trial Balance
April 30, 2025

	Debit	Credit
Cash	$ 5,912	
Accounts Receivable	5,240	
Supplies	2,967	
Equipment	6,100	
Accounts Payable		$ 7,044
Common Stock		8,000
Retained Earnings		2,000
Service Revenue		5,200
Office Expense	4,320	
	$24,539	$22,244

An examination of the ledger shows these errors.

1. Cash received from a customer on account was recorded (both debit and credit) as $1,380 instead of $1,830.
2. The purchase on account of a computer costing $3,200 was recorded as a debit to Office Expense and a credit to Accounts Payable.
3. Services were performed on account for a client, $2,250, for which Accounts Receivable was debited $2,250 and Service Revenue was credited $225.
4. A payment of $95 for telephone charges was entered as a debit to Office Expense and a debit to Cash.
5. The Service Revenue account was totaled at $5,200 instead of $5,280.

Instructions

From this information prepare a corrected trial balance.

E2.4 (LO 2) (Corrected Trial Balance) The following trial balance of Watteau Co. does not balance.

Watteau Co. Trial Balance June 30, 2025		
	Debit	**Credit**
Cash		$ 2,870
Accounts Receivable	$ 3,231	
Supplies	800	
Equipment	3,800	
Accounts Payable		2,666
Unearned Service Revenue	1,200	
Common Stock		6,000
Retained Earnings		3,000
Service Revenue		2,380
Salaries and Wages Expense	3,400	
Office Expense	940	
	$13,371	$16,916

Each of the listed accounts should have a normal balance per the general ledger. An examination of the ledger and journal reveals the following errors.

1. Cash received from a customer on account was debited for $570, and Accounts Receivable was credited for the same amount. The actual collection was for $750.
2. The purchase of a computer printer on account for $500 was recorded as a debit to Supplies for $500 and a credit to Accounts Payable for $500.
3. Services were performed on account for a client for $890. Accounts Receivable was debited for $890 and Service Revenue was credited for $89.
4. A payment of $65 for telephone charges was recorded as a debit to Office Expense for $65 and a debit to Cash for $65.
5. When the Unearned Service Revenue account was reviewed, it was found that service revenue amounting to $325 was performed prior to June 30 (related to Unearned Service Revenue).
6. A debit posting to Salaries and Wages Expense of $670 was omitted.
7. A payment on account for $206 was credited to Cash for $206 and credited to Accounts Payable for $260.
8. A dividend of $575 was debited to Salaries and Wages Expense for $575 and credited to Cash for $575.

Instruction

Prepare a correct trial balance. (*Note:* It may be necessary to add one or more accounts to the trial balance.)

E2.5 (LO 3) Excel (Adjusting Entries) The ledger of Duggan Rental Agency on March 31 of the current year includes the following selected accounts before adjusting entries have been prepared.

	Debit	**Credit**
Prepaid Insurance	$ 3,600	
Supplies	2,800	
Equipment	25,000	
Accumulated Depreciation—Equipment		$ 8,400
Notes Payable		20,000
Unearned Rent Revenue		9,300
Rent Revenue		60,000
Interest Expense	–0–	
Salaries and Wages Expense	14,000	

An analysis of the accounts shows the following.

1. The equipment depreciates $250 per month.
2. One-third of the unearned rent was recognized as revenue during the quarter.
3. Interest of $500 is accrued on the notes payable.
4. Supplies on hand total $850.
5. Insurance expires at the rate of $300 per month.

Instructions

Prepare the adjusting entries at March 31, assuming that adjusting entries are made quarterly. Additional accounts are Depreciation Expense, Insurance Expense, Interest Payable, and Supplies Expense. (Omit explanations.)

E2.6 (LO 3) (Adjusting Entries) Karen Weller, D.D.S., opened a dental practice on January 1, 2025. During the first month of operations, the following transactions occurred.

1. Performed services for patients who had dental plan insurance. At January 31, $750 of such services was performed but not yet billed to the insurance companies.
2. Utility expenses incurred but not paid prior to January 31 totaled $520.
3. Purchased dental equipment on January 1 for $80,000, paying $20,000 in cash and signing a $60,000, 3-year note payable. The equipment depreciates $400 per month. Interest is $500 per month.
4. Purchased a one-year malpractice insurance policy on January 1 for $12,000.
5. Purchased $1,600 of dental supplies. On January 31, determined that $500 of supplies were on hand.

Instructions

Prepare the adjusting entries on January 31. (Omit explanations.) Account titles are Accumulated Depreciation—Equipment, Depreciation Expense, Service Revenue, Accounts Receivable, Insurance Expense, Interest Expense, Interest Payable, Prepaid Insurance, Supplies, Supplies Expense, Utilities Expenses, and Accounts Payable.

E2.7 (LO 3) (Analyze Adjusted Data) A partial adjusted trial balance of Piper Company at January 31, 2025, shows the following.

Piper Company
Adjusted Trial Balance
January 31, 2025

	Debit	Credit
Supplies	$ 700	
Prepaid Insurance	2,400	
Salaries and Wages Payable		$ 800
Unearned Service Revenue		750
Supplies Expense	950	
Insurance Expense	400	
Salaries and Wages Expense	1,800	
Service Revenue		2,000

Instructions

Answer the following questions, assuming the year begins January 1.

a. If the amount in Supplies Expense is the January 31 adjusting entry, and $850 of supplies was purchased in January, what was the balance in Supplies on January 1?
b. If the amount in Insurance Expense is the January 31 adjusting entry, and the original insurance premium was for one year, what was the total premium and when was the policy purchased?
c. If $2,500 of salaries was paid in January, what was the balance in Salaries and Wages Payable at December 31, 2024?
d. If $1,600 was received in January for services performed in January, what was the balance in Unearned Service Revenue at December 31, 2024?

E2.8 (LO 3) Excel (Adjusting Entries) Andy Roddick is the new owner of Ace Computer Services. At the end of August 2025, his first month of ownership, Roddick is trying to prepare monthly financial statements. Below is some information related to unrecorded expenses that the business incurred during August.

1. At August 31, Roddick owed his employees $1,900 in wages that will be paid on September 1.
2. At the end of the month, he had not yet received the month's utility bill. Based on past experience, he estimated the bill would be approximately $600.
3. On August 1, Roddick borrowed $30,000 from a local bank on a 15-year mortgage. The annual interest rate is 8%.
4. A telephone bill in the amount of $117 covering August charges is unpaid at August 31.

Instructions

Prepare the adjusting journal entries as of August 31, 2025, suggested by the information above.

E2.9 (LO 2, 3) (Adjusting Entries) Selected accounts of Urdu Company are as follows.

Supplies			
Beg. bal.	800	10/31	470

Accounts Receivable			
10/17	2,400		
10/31	1,650		

Salaries and Wages Expense			
10/15	800		
10/31	600		

Salaries and Wages Payable			
		10/31	600

Unearned Service Revenue			
10/31	400	10/20	650

Supplies Expense			
10/31	470		

Service Revenue			
		10/17	2,400
		10/31	1,650
		10/31	400

Instructions

From an analysis of the T-accounts, reconstruct (a) the October transaction entries, and (b) the adjusting journal entries that were made on October 31, 2025. Prepare explanations for each journal entry.

E2.10 (LO 3) (Adjusting Entries) Greco Resort opened for business on June 1 with eight air-conditioned units. Its trial balance on August 31 is as follows.

Greco Resort
Trial Balance
August 31, 2025

	Debit	Credit
Cash	$ 10,600	
Prepaid Insurance	4,500	
Supplies	2,600	
Land	20,000	
Buildings	120,000	
Equipment	16,000	
Accounts Payable		$ 4,500
Unearned Rent Revenue		4,600
Mortgage Payable		60,000
Common Stock		91,000
Retained Earnings		-0-
Dividends	5,000	
Rent Revenue		76,200
Salaries and Wages Expense	44,800	
Utilities Expenses	9,200	
Maintenance and Repairs Expense	3,600	
	$236,300	$236,300

Other data:

1. The balance in prepaid insurance is a one-year premium paid on June 1, 2025.
2. An inventory count on August 31 shows $450 of supplies on hand.
3. Annual depreciation rates are buildings (4%) and equipment (10%). Salvage value is estimated to be 10% of cost.
4. Unearned Rent Revenue of $3,800 was earned prior to August 31.
5. Salaries of $375 were unpaid at August 31.
6. Rentals of $800 were due from tenants at August 31.
7. The mortgage interest rate is 8% per year.

Instructions

a. Journalize the adjusting entries on August 31 for the 3-month period June 1–August 31. (Omit explanations.)

b. Prepare an adjusted trial balance on August 31.

E2.11 (LO 4) (Prepare Financial Statements) The adjusted trial balance of Oliver Co. as of December 31, 2025, contains the following.

Oliver Co. Adjusted Trial Balance December 31, 2025		
	Dr.	**Cr.**
Cash	$19,472	
Accounts Receivable	6,920	
Prepaid Rent	2,280	
Equipment	18,050	
Accumulated Depreciation—Equipment		$ 4,895
Notes Payable		5,700
Accounts Payable		5,472
Common Stock		20,000
Retained Earnings		11,310
Dividends	3,000	
Service Revenue		11,590
Salaries and Wages Expense	6,840	
Rent Expense	2,260	
Depreciation Expense	145	
Interest Expense	83	
Interest Payable		83
	$59,050	$59,050

Instructions

a. Prepare an income statement.

b. Prepare a retained earnings statement.

c. Prepare a classified balance sheet.

E2.12 (LO 4) (Prepare Financial Statements) Santo Design was founded by Thomas Grant in January 2016. Presented below is the adjusted trial balance as of December 31, 2025.

Santo Design Adjusted Trial Balance December 31, 2025		
	Dr.	**Cr.**
Cash	$ 11,350	
Accounts Receivable	21,500	
Supplies	5,000	
Prepaid Insurance	2,500	
Equipment	60,000	
Accumulated Depreciation—Equipment		$ 35,000
Accounts Payable		5,000
Interest Payable		150
Notes Payable		5,000
Unearned Service Revenue		5,600
Salaries and Wages Payable		1,300
Common Stock		10,000
Retained Earnings		3,500
Service Revenue		61,500
Salaries and Wages Expense	11,300	
Insurance Expense	850	
Interest Expense	150	
Depreciation Expense	7,000	
Supplies Expense	3,400	
Rent Expense	4,000	
	$127,050	$127,050

Instructions

a. Prepare an income statement and a retained earnings statement for the year ending December 31, 2025, and an unclassified balance sheet at December 31.

b. Answer the following questions.

1. If the note has been outstanding 6 months, what is the annual interest rate on that note?

2. If the company paid $17,500 in salaries in 2025, what was the balance in Salaries and Wages Payable on December 31, 2024?

E2.13 (LO 4, 5) (Closing Entries) The adjusted trial balance of Lopez Company shows the following data pertaining to sales at the end of its fiscal year, October 31, 2025: Sales Revenue $800,000, Delivery Expense $12,000, Sales Returns and Allowances $24,000, and Sales Discounts $15,000.

Instructions

a. Prepare the revenues section of the income statement.

b. Prepare separate closing entries for (1) sales and (2) the contra accounts to sales.

E2.14 (LO 4) (Closing Entries) Presented below is information related to Gonzales Corporation for the month of January 2025.

Cost of goods sold	$208,000	Salaries and wages expense	$ 61,000
Delivery expense	7,000	Sales discounts	8,000
Insurance expense	12,000	Sales returns and allowances	13,000
Rent expense	20,000	Sales revenue	350,000

Instructions

Prepare the necessary closing entries.

E2.15 (LO 5) (Missing Amounts) Presented below is financial information for two different companies.

	Alatorre Company	Eduardo Company
Sales revenue	$90,000	(d)
Sales returns and allowances	(a)	$ 5,000
Net sales	81,000	95,000
Cost of goods sold	56,000	(e)
Gross profit	(b)	38,000
Operating expenses	15,000	23,000
Net income	(c)	15,000

Instructions

Compute the missing amounts.

E2.16 (LO 4) (Closing Entries for a Corporation) Presented below are selected account balances for Homer Winslow Co. as of December 31, 2025.

Inventory 12/31/25	$ 60,000	Cost of Goods Sold	$225,700
Common Stock	75,000	Selling Expenses	16,000
Retained Earnings	45,000	Administrative Expenses	38,000
Dividends	18,000	Income Tax Expense	30,000
Sales Returns and Allowances	12,000		
Sales Discounts	15,000		
Sales Revenue	410,000		

Instructions

Prepare closing entries for Homer Winslow Co. on December 31, 2025. (Omit explanations.)

E2.17 (LO 2) (Transactions of a Corporation, Including Investment and Dividend) Scratch Miniature Golf and Driving Range Inc. was opened on March 1 by Rick Fowler. The following selected events and transactions occurred during March.

Mar. 1	Invested $50,000 cash in the business in exchange for common stock.
3	Purchased Michelle Wie's Golf Land for $38,000 cash. The price consists of land $10,000, building $22,000, and equipment $6,000. (Make one compound entry.)
5	Advertised the opening of the driving range and miniature golf course, paying advertising expenses of $1,600.
6	Paid cash $1,480 for a one-year insurance policy.
10	Purchased golf equipment for $2,500 from Singh Company, payable in 30 days.
18	Received golf fees of $1,200 in cash.
25	Declared and paid a $500 cash dividend.
30	Paid wages of $900.
30	Paid Singh Company in full.
31	Received $750 of fees in cash.

Scratch uses the following accounts: Cash, Prepaid Insurance, Land, Buildings, Equipment, Accounts Payable, Common Stock, Dividends, Service Revenue, Advertising Expense, and Salaries and Wages Expense.

Instructions

Journalize the March transactions. (Provide explanations for the journal entries.)

***E2.18 (LO 6) (Cash to Accrual Basis)** Jill Accardo, M.D., maintains the accounting records of Accardo Clinic on a cash basis. During 2025, Dr. Accardo collected $142,600 from her patients and paid $55,470 in expenses. At January 1, 2025, and December 31, 2025, she had accounts receivable, unearned service revenue, accrued expenses, and prepaid expenses as follows. (All long-lived assets are rented.)

	January 1, 2025	December 31, 2025
Accounts receivable	$9,250	$15,927
Unearned service revenue	2,840	4,111
Accrued expenses	3,435	2,108
Prepaid expenses	1,917	3,232

Instructions

Prepare a schedule that converts Dr. Accardo's "excess of cash collected over cash disbursed" for the year 2025 to net income on an accrual basis for the year 2025.

***E2.19 (LO 6) (Cash and Accrual Basis)** Wayne Rogers Corp. maintains its financial records on the cash basis of accounting. Interested in securing a long-term loan from its regular bank, Wayne Rogers Corp. requests you as its independent CPA to convert its cash-basis income statement data to the accrual basis. You are provided with the following summarized data covering 2024, 2025, and 2026.

	2024	2025	2026
Cash receipts from sales:			
On 2024 sales	$295,000	$160,000	$ 30,000
On 2025 sales	–0–	355,000	90,000
On 2026 sales			408,000
Cash payments for expenses:			
On 2024 expenses	185,000	67,000	25,000
On 2025 expenses	40,000[a]	160,000	55,000
On 2026 expenses		45,000[b]	218,000

[a]Prepayments of 2025 expenses.
[b]Prepayments of 2026 expenses.

Instructions

a. Using the data above, prepare abbreviated income statements for the years 2024 and 2025 on the cash basis.

b. Using the data above, prepare abbreviated income statements for the years 2024 and 2025 on the accrual basis.

***E2.20 (LO 3, 7) (Adjusting and Reversing Entries)** When the accounts of Daniel Barenboim Inc. are examined, the adjusting data listed below are uncovered on December 31, the end of an annual fiscal period.

1. The prepaid insurance account shows a debit of $5,280, representing the cost of a 2-year fire insurance policy dated August 1 of the current year.
2. On November 1, Rent Revenue was credited for $1,800, representing revenue from a subrental for a 3-month period beginning on that date.
3. Purchase of advertising materials for $800 during the year was recorded in the Advertising Expense account. On December 31, advertising materials of $290 are on hand.
4. Interest of $770 has accrued on notes payable. The interest will be paid in January of the next year.

Instructions

Prepare the following in general journal form.

a. The adjusting entry for each item.

b. The reversing entry for each item where appropriate.

*E2.21 (LO 8) **(Worksheet)** Presented below are selected accounts for Alvarez Company as reported in the worksheet at the end of May 2025.

	A	B	C	D	E	F	G
1	**Alvarez Co. Worksheet For the Month Ended May 31, 2025**						
2		**Adjusted Trial Balance**		**Income Statement**		**Balance Sheet**	
3	**Account Titles**	**Dr.**	**Cr.**	**Dr.**	**Cr.**	**Dr.**	**Cr.**
4	Cash	9,000					
5	Inventory	80,000					
6	Sales Revenue		450,000				
7	Sales Returns and Allowances	10,000					
8	Sales Discounts	5,000					
9	Cost of Goods Sold	250,000					

Instructions

Complete the worksheet by extending amounts reported in the adjusted trial balance to the appropriate columns in the worksheet. Do not total individual columns.

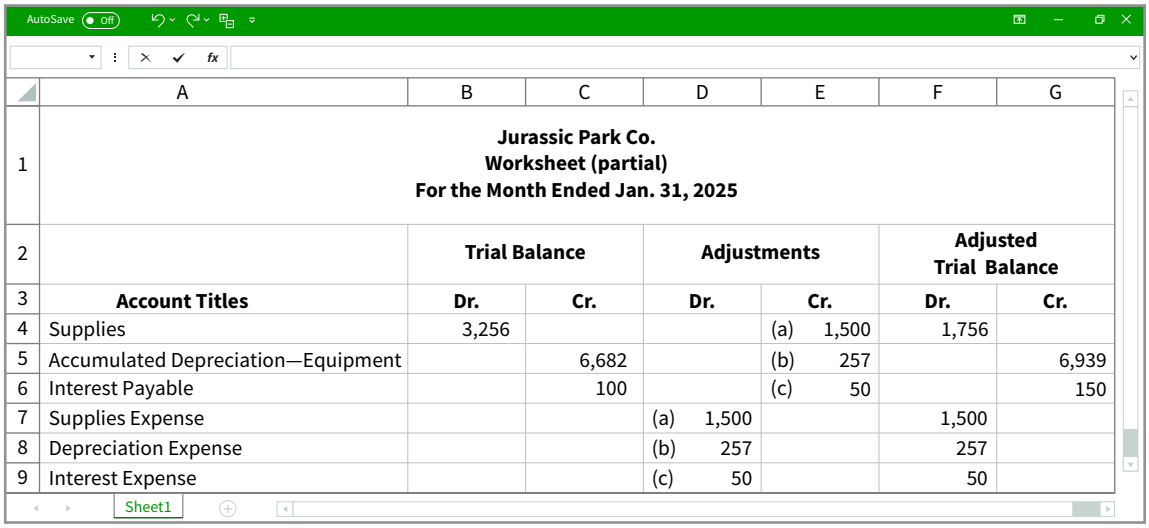
*E2.22 (LO 8) **(Worksheet and Balance Sheet Presentation)** The adjusted trial balance for Ed Bradley Co. is presented in the following worksheet for the month ended April 30, 2025.

	A	B	C	D	E	F	G
1	**Ed Bradley Co. Worksheet (partial) For the Month Ended April 30, 2025**						
2		**Adjusted Trial Balance**		**Income Statement**		**Balance Sheet**	
3	**Account Titles**	**Dr.**	**Cr.**	**Dr.**	**Cr.**	**Dr.**	**Cr.**
4	Cash	24,522					
5	Accounts Receivable	6,920					
6	Prepaid Rent	2,280					
7	Equipment	18,050					
8	Accumulated Depreciation—Equipment		4,895				
9	Notes Payable		5,700				
10	Accounts Payable		4,472				
11	Common stock		34,960				
12	Retained Earnings—April 1, 2025		1,000				
13	Dividends	1,100					
14	Service Revenue		12,590				
15	Salaries and Wages Expense	6,840					
16	Rent Expense	3,760					
17	Depreciation Expense	145					
18	Interest Expense	83					
19	Interest Payable		83				

Instructions

Complete the worksheet and prepare a classified balance sheet.

***E2.23 (LO 8) (Partial Worksheet Preparation)** Jurassic Park Co. prepares monthly financial statements from a worksheet. Selected portions of the January worksheet showed the following data.



	A	B	C	D	E	F	G
1	**Jurassic Park Co. Worksheet (partial) For the Month Ended Jan. 31, 2025**						
2		**Trial Balance**		**Adjustments**		**Adjusted Trial Balance**	
3	**Account Titles**	**Dr.**	**Cr.**	**Dr.**	**Cr.**	**Dr.**	**Cr.**
4	Supplies	3,256			(a) 1,500	1,756	
5	Accumulated Depreciation—Equipment		6,682		(b) 257		6,939
6	Interest Payable		100		(c) 50		150
7	Supplies Expense			(a) 1,500		1,500	
8	Depreciation Expense			(b) 257		257	
9	Interest Expense			(c) 50		50	

Sheet1

During February, no events occurred that affected these accounts. But at the end of February, the following information was available.

(a) Supplies on hand	$715
(b) Monthly depreciation	$257
(c) Accrued interest	$ 50

Instructions

Reproduce the data that would appear in the February worksheet, and indicate the amounts that would be shown in the February income statement.

Problems

P2.1 (LO 2, 4) (Transactions, Financial Statements—Service Company) Listed below are the transactions of Yasunari Kawabata, D.D.S., for the month of September.

Sept. 1	Kawabata begins practice as a dentist, invests $20,000 cash, and issues 2,000 shares of $10 par stock.
2	Purchases dental equipment on account from Green Jacket Co. for $17,280.
4	Pays rent for office space, $680 for the month.
4	Employs a receptionist, Michael Bradley.
5	Purchases dental supplies for cash, $942.
8	Receives cash of $1,690 from patients for services performed.
10	Pays miscellaneous office expenses, $430.
14	Bills patients $5,820 for services performed.
18	Pays Green Jacket Co. on account, $3,600.
19	Pays a dividend of $3,000 cash.
20	Receives $980 from patients on account.
25	Bills patients $2,110 for services performed.
30	Pays the following expenses in cash: salaries and wages $1,800; miscellaneous office expenses $85.
30	Dental supplies used during September, $330.

Instructions

a. Enter the transactions shown above in appropriate general ledger accounts (use T-accounts). Use the following ledger accounts: Cash, Accounts Receivable, Supplies, Equipment, Accumulated Depreciation—Equipment, Accounts Payable, Common Stock, Retained Earnings, Dividends, Service Revenue, Rent Expense, Office Expense, Salaries and Wages Expense, Supplies Expense,

Depreciation Expense, and Income Summary. Allow 10 lines for the Cash and Income Summary accounts, and 5 lines for each of the other accounts needed. Record depreciation using a 5-year life on the equipment, the straight-line method, and no salvage value.

b. Prepare a trial balance.

c. Prepare an income statement, a retained earnings statement, and an unclassified balance sheet.

d. Close the ledger.

e. Prepare a post-closing trial balance.

P2.2 (LO 3, 4) Excel (Adjusting Entries and Financial Statements) Mason Advertising was founded in January 2018. Presented below are adjusted and unadjusted trial balances as of December 31, 2025.

Mason Advertising
Trial Balance
December 31, 2025

	Unadjusted		Adjusted	
	Dr.	**Cr.**	**Dr.**	**Cr.**
Cash	$ 11,000		$ 11,000	
Accounts Receivable	20,000		23,500	
Supplies	8,400		3,000	
Prepaid Insurance	3,350		2,500	
Equipment	60,000		60,000	
Accumulated Depreciation—Equipment		$28,000		$ 33,000
Accounts Payable		5,000		5,000
Interest Payable		–0–		150
Notes Payable		5,000		5,000
Unearned Service Revenue		7,000		5,600
Salaries and Wages Payable		–0–		1,300
Common Stock		10,000		10,000
Retained Earnings		3,500		3,500
Service Revenue		58,600		63,500
Salaries and Wages Expense	10,000		11,300	
Insurance Expense			850	
Interest Expense	350		500	
Depreciation Expense			5,000	
Supplies Expense			5,400	
Rent Expense	4,000		4,000	
	$117,100	$117,100	$127,050	$127,050

Instructions

a. Journalize the annual adjusting entries that were made. (Omit explanations.)

b. Prepare an income statement and a retained earnings statement for the year ending December 31, 2025, and an unclassified balance sheet at December 31.

c. Answer the following questions.

1. If the note has been outstanding 3 months, what is the annual interest rate on that note?

2. If the company paid $12,500 in salaries and wages in 2025, what was the balance in Salaries and Wages Payable on December 31, 2024?

P2.3 (LO 3) (Adjusting Entries) A review of the ledger of Baylor Company at December 31, 2025, produces the following data pertaining to the preparation of annual adjusting entries.

1. Salaries and Wages Payable $0. There are eight employees. Salaries and wages are paid every Friday for the current week. Five employees receive $700 each per week, and three employees earn $600 each per week. December 31 is a Tuesday. Employees do not work weekends. All employees worked the last 2 days of December.

2. Unearned Rent Revenue $384,000. The company began subleasing office space in its new building on November 1. Each tenant is required to make a $5,000 security deposit that is not refundable

until occupancy is terminated. At December 31, the company had the following rental contracts that are paid in full for the entire term of the lease.

Date	Term (in months)	Monthly Rent	Number of Leases
Nov. 1	6	$6,000	5
Dec. 1	6	$8,500	4

3. Prepaid Advertising $13,200. This balance consists of payments on two advertising contracts. The contracts provide for monthly advertising in two trade magazines. The terms of the contracts are as shown below.

   The first advertisement runs in the month in which the contract is signed.

Contract	Date	Amount	Number of Magazine Issues
A650	May 1	$6,000	12
B974	Oct. 1	7,200	24

4. Notes Payable $60,000. This balance consists of a note for one year at an annual interest rate of 12%, dated June 1.

Instructions

Prepare the adjusting entries at December 31, 2025. (Show all computations).

P2.4 (LO 3, 4, 5) (Financial Statements, Adjusting and Closing Entries) The trial balance of Bellemy Fashion Center contained the following accounts at November 30, the end of the company's fiscal year.

Bellemy Fashion Center
Trial Balance
November 30, 2025

	Debit	Credit
Cash	$ 28,700	
Accounts Receivable	33,700	
Inventory	45,000	
Supplies	5,500	
Equipment	133,000	
Accumulated Depreciation—Equipment		$ 24,000
Notes Payable		51,000
Accounts Payable		48,500
Common Stock		90,000
Retained Earnings		8,000
Sales Revenue		757,200
Sales Returns and Allowances	4,200	
Cost of Goods Sold	495,400	
Salaries and Wages Expense	140,000	
Advertising Expense	26,400	
Utilities Expenses	14,000	
Maintenance and Repairs Expense	12,100	
Delivery Expense	16,700	
Rent Expense	24,000	
	$978,700	$978,700

Adjustment data:

1. Supplies on hand totaled $1,500.
2. Depreciation is $15,000 on the equipment.
3. Interest of $11,000 is accrued on notes payable at November 30.

Other data:

1. Salaries expense is 70% selling and 30% administrative.
2. Rent expense and utilities expenses are 80% selling and 20% administrative.
3. $30,000 of notes payable are due for payment next year.
4. Maintenance and repairs expense is 100% administrative.

Instructions

a. Journalize the adjusting entries.

b. Prepare an adjusted trial balance.

c. Prepare a multiple-step income statement (ignore taxes) and retained earnings statement for the year and a classified balance sheet as of November 30, 2025.

d. Journalize the closing entries.

e. Prepare a post-closing trial balance.

P2.5 (LO 3) (Adjusting Entries) The accounts listed below appeared in the December 31 trial balance of the Savard Theater.

	Debit	Credit
Equipment	$192,000	
Accumulated Depreciation—Equipment		$ 60,000
Notes Payable		90,000
Admissions Revenue		380,000
Advertising Expense	13,680	
Salaries and Wages Expense	57,600	
Interest Expense	1,400	

Instructions

a. From the account balances listed above and the information given below, prepare the annual adjusting entries necessary on December 31. (Omit explanations.)

1. The equipment has an estimated life of 16 years and a salvage value of $24,000 at the end of that time. (Use straight-line method.)

2. The note payable is a 90-day note given to the bank October 20 and bearing interest at 8%. (Use 360 days for denominator.)

3. In December, 2,000 coupon admission books were sold at $30 each and recorded as Admissions Revenue. They could be used for admission any time after January 1.

4. Advertising expense paid in advance and included in Advertising Expense $1,100.

5. Salaries and wages accrued but unpaid $4,700.

b. What amounts should be shown for each of the following on the income statement for the year?

1. Interest expense.

2. Admissions revenue.

3. Advertising expense.

4. Salaries and wages expense.

P2.6 (LO 3, 4) (Adjusting Entries and Financial Statements) The following are the trial balance and the other information related to Perez Consulting Engineers.

Perez Consulting Engineers
Trial Balance
December 31, 2025

	Debit	Credit
Cash	$ 29,500	
Accounts Receivable	49,600	
Allowance for Doubtful Accounts		$ 750
Supplies	1,960	
Prepaid Insurance	1,100	
Equipment	25,000	
Accumulated Depreciation—Equipment		6,250
Notes Payable		7,200
Common Stock		10,000
Retained Earnings		25,010
Service Revenue		100,000
Rent Expense	9,750	
Salaries and Wages Expense	30,500	
Utilities Expenses	1,080	
Office Expense	720	
	$149,210	$149,210

1. Fees received in advance from clients $6,000, which were recorded as revenue.
2. Services performed for clients that were not recorded by December 31, $4,900.
3. Bad debt expense for the year is $1,430.
4. Insurance expired during the year $480.
5. Equipment is being depreciated at 10% per year.
6. Perez gave the bank a 90-day, 10% note for $7,200 on December 1, 2025.
7. Rent of the building is $750 per month. The rent for 2025 has been paid, as has that for January 2026, and recorded as Rent Expense.
8. Office salaries and wages earned but unpaid December 31, 2025, $2,510.

Instructions

a. From the trial balance and other information given, prepare annual adjusting entries as of December 31, 2025. (Omit explanations.)

b. Prepare an income statement for 2025, a retained earnings statement, and a classified balance sheet. Perez paid a $17,000 cash dividend during the year (recorded in Retained Earnings).

P2.7 (LO 3, 4) (Adjusting Entries and Financial Statements) Rolling Hills Golf Inc. was organized on July 1, 2025. Quarterly financial statements are prepared. The unadjusted trial balance and adjusted trial balance on September 30 are as follows.

Rolling Hills Golf Inc.
Trial Balance
September 30, 2025

	Unadjusted		Adjusted	
	Dr.	Cr.	Dr.	Cr.
Cash	$ 6,700		$ 6,700	
Accounts Receivable	400		1,000	
Prepaid Rent	1,800		900	
Supplies	1,200		180	
Equipment	15,000		15,000	
Accumulated Depreciation—Equipment				$ 350
Notes Payable		$ 5,000		5,000
Accounts Payable		1,070		1,070
Salaries and Wages Payable				600
Interest Payable				50
Unearned Rent Revenue		1,000		800
Common Stock		14,000		14,000
Retained Earnings		0		0
Dividends	600		600	
Service Revenue		14,100		14,700
Rent Revenue		700		900
Salaries and Wages Expense	8,800		9,400	
Rent Expense	900		1,800	
Depreciation Expense			350	
Supplies Expense			1,020	
Utilities Expenses	470		470	
Interest Expense			50	
	$35,870	$35,870	$37,470	$37,470

Instructions

a. Journalize the adjusting entries that were made.

b. Prepare an income statement and a retained earnings statement for the 3 months ending September 30 and a classified balance sheet at September 30.

c. Identify which accounts should be closed on September 30.

d. If the note bears interest at 12%, how many months has it been outstanding?

P2.8 (LO 3, 4) (Adjusting Entries and Financial Statements) Vedula Advertising was founded by Murali Vedula in January 2020. The following are both the adjusted and unadjusted trial balances as of December 31, 2025.

Vedula Advertising
Trial Balance
December 31, 2025

	Unadjusted		Adjusted	
	Dr.	Cr.	Dr.	Cr.
Cash	$ 11,000		$ 11,000	
Accounts Receivable	16,000		19,500	
Supplies	9,400		6,500	
Prepaid Insurance	3,350		1,790	
Equipment	60,000		60,000	
Accumulated Depreciation—Equipment		$ 25,000		$ 30,000
Notes Payable		8,000		8,000
Accounts Payable		2,000		2,000
Interest Payable		0		560
Unearned Service Revenue		5,000		3,100
Salaries and Wages Payable		0		820
Common Stock		20,000		20,000
Retained Earnings		5,500		5,500
Dividends	10,000		10,000	
Service Revenue		57,600		63,000
Salaries and Wages Expense	9,000		9,820	
Insurance Expense			1,560	
Interest Expense			560	
Depreciation Expense			5,000	
Supplies Expense			2,900	
Rent Expense	4,350		4,350	
	$123,100	$123,100	$132,980	$132,980

Instructions

a. Journalize the annual adjusting entries that were made.

b. Prepare an income statement and a retained earnings statement for the year ended December 31, and a classified balance sheet at December 31.

c. Identify which accounts should be closed on December 31.

d. If the note has been outstanding 10 months, what is the annual interest rate on that note?

e. If the company paid $10,500 in salaries and wages in 2025, what was the balance in Salaries and Wages Payable on December 31, 2024?

P2.9 (LO 2, 3, 4) (Adjusting and Closing) Presented below is the trial balance of the Crestwood Golf Club, Inc. as of December 31. The books are closed annually on December 31.

Crestwood Golf Club, Inc.
Trial Balance
December 31

	Debit	Credit
Cash	$ 15,000	
Accounts Receivable	13,000	
Allowance for Doubtful Accounts		$ 1,100
Prepaid Insurance	9,000	
Land	350,000	
Buildings	120,000	
Accumulated Depreciation—Buildings		38,400
Equipment	150,000	
Accumulated Depreciation—Equipment		70,000
Common Stock		400,000
Retained Earnings		82,000
Dues Revenue		200,000
Green Fees Revenue		5,900
Rent Revenue		17,600
Utilities Expenses	54,000	
Salaries and Wages Expense	80,000	
Maintenance and Repairs Expense	24,000	
	$815,000	$815,000

Instructions

a. Enter the balances in ledger accounts. Allow five lines for each account.

b. From the trial balance and the information given below, prepare annual adjusting entries and post to the ledger accounts. (Omit explanations.)

1. The buildings have an estimated life of 30 years with no salvage value (straight-line method).

2. The equipment is depreciated at 10% per year.

3. Insurance expired during the year $3,500.

4. The rent revenue represents the amount received for 11 months for dining facilities. The December rent has not yet been received.

5. It is estimated that 12% of the accounts receivable will be uncollectible.

6. Salaries and wages earned but not paid by December 31, $3,600.

7. Dues received in advance from members $8,900 were recorded as Dues Revenue.

c. Prepare an adjusted trial balance.

d. Prepare closing entries and post.

P2.10 (LO 2, 3, 4) (Adjusting and Closing) Presented below is the December 31 trial balance of New York Boutique.

New York Boutique
Trial Balance
December 31

	Debit	Credit
Cash	$ 18,500	
Accounts Receivable	32,000	
Allowance for Doubtful Accounts		$ 700
Inventory, December 31	80,000	
Prepaid Insurance	5,100	
Equipment	84,000	
Accumulated Depreciation—Equipment		35,000
Notes Payable		28,000
Common Stock		80,600
Retained Earnings		10,000
Sales Revenue		600,000
Cost of Goods Sold	408,000	
Salaries and Wages Expense (sales)	50,000	
Advertising Expense	6,700	
Salaries and Wages Expense (administrative)	65,000	
Supplies Expense	5,000	
	$754,300	$754,300

Instructions

a. Construct T-accounts and enter the balances shown.

b. Prepare adjusting journal entries for the following and post to the T-accounts. (Omit explanations.) Open additional T-accounts as necessary. (The books are closed yearly on December 31.)

1. Bad debt expense to be recorded is $1,400.

2. Equipment is depreciated based on a 7-year life (no salvage value).

3. Insurance expired during the year $2,550.

4. Interest accrued on notes payable $3,360.

5. Sales salaries and wages earned but not paid $2,400.

6. Advertising paid in advance $700. It was charged to Advertising Expense when paid.

7. Office supplies on hand $1,500, charged to Supplies Expense when purchased.

c. Prepare closing entries and post to the accounts.

***P2.11 (LO 6) (Cash and Accrual Basis)** On January 1, 2025, Norma Smith and Grant Wood formed a computer sales and service company in Soapsville, Arkansas, by investing $90,000 cash. The new company, Arkansas Sales and Service, has the following transactions during January.

1. Pays $6,000 in advance for 3 months' rent of office, showroom, and repair space.

2. Purchases 40 personal computers at a cost of $1,500 each, 6 graphics computers at a cost of $2,500 each, and 25 printers at a cost of $300 each, paying cash upon delivery.

3. Sales, repair, and office employees earn $12,600 in salaries and wages during January, of which $3,000 was still payable at the end of January.
4. Sells 30 personal computers at $2,550 each, 4 graphics computers for $3,600 each, and 15 printers for $500 each; $75,000 is received in cash in January, and $23,400 is sold on a deferred payment basis.
5. Other operating expenses of $8,400 are incurred and paid for during January; $2,000 of incurred expenses are payable at January 31.

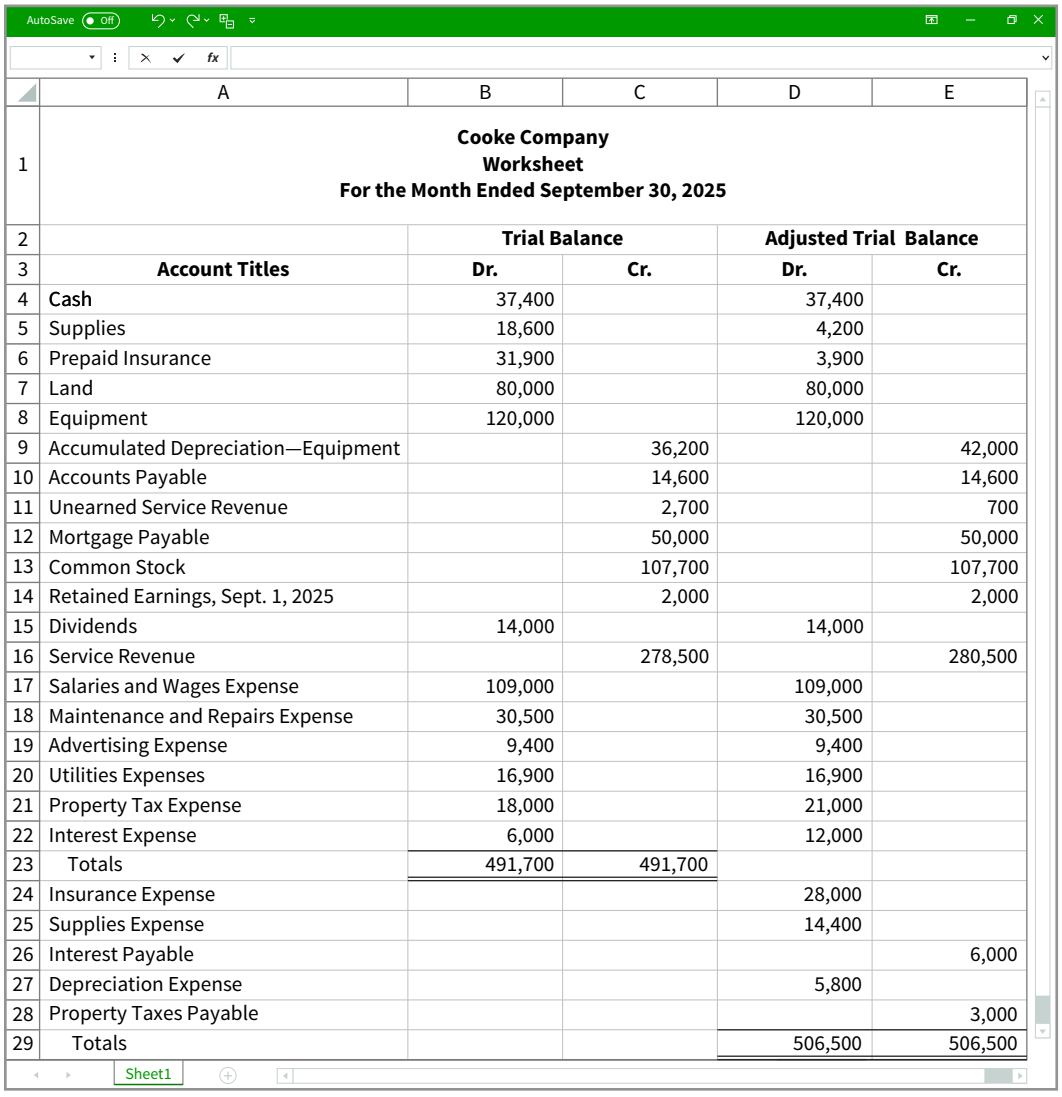
Instructions

a. Using the transaction data above, prepare (1) a cash-basis income statement and (2) an accrual-basis income statement for the month of January.

b. Using the transaction data above, prepare (1) a cash-basis balance sheet and (2) an accrual-basis balance sheet as of January 31, 2025.

c. Identify the items in the cash-basis financial statements that make cash-basis accounting inconsistent with the theory underlying the elements of financial statements.

***P2.12 (LO 3, 4, 8) (Worksheet, Balance Sheet, Adjusting and Closing Entries)** Cooke Company has a fiscal year ending on September 30. Selected data from the September 30 worksheet are presented below.



	A	B	C	D	E
1	**Cooke Company Worksheet For the Month Ended September 30, 2025**				
2		**Trial Balance**		**Adjusted Trial Balance**	
3	**Account Titles**	**Dr.**	**Cr.**	**Dr.**	**Cr.**
4	Cash	37,400		37,400	
5	Supplies	18,600		4,200	
6	Prepaid Insurance	31,900		3,900	
7	Land	80,000		80,000	
8	Equipment	120,000		120,000	
9	Accumulated Depreciation—Equipment		36,200		42,000
10	Accounts Payable		14,600		14,600
11	Unearned Service Revenue		2,700		700
12	Mortgage Payable		50,000		50,000
13	Common Stock		107,700		107,700
14	Retained Earnings, Sept. 1, 2025		2,000		2,000
15	Dividends	14,000		14,000	
16	Service Revenue		278,500		280,500
17	Salaries and Wages Expense	109,000		109,000	
18	Maintenance and Repairs Expense	30,500		30,500	
19	Advertising Expense	9,400		9,400	
20	Utilities Expenses	16,900		16,900	
21	Property Tax Expense	18,000		21,000	
22	Interest Expense	6,000		12,000	
23	Totals	491,700	491,700		
24	Insurance Expense			28,000	
25	Supplies Expense			14,400	
26	Interest Payable				6,000
27	Depreciation Expense			5,800	
28	Property Taxes Payable				3,000
29	Totals			506,500	506,500

Instructions

a. Prepare a complete worksheet.

b. Prepare a classified balance sheet. (*Note:* $10,000 of the mortgage payable is due for payment in the next fiscal year.)

c. Journalize the adjusting entries using the worksheet as a basis.

d. Journalize the closing entries using the worksheet as a basis.

e. Prepare a post-closing trial balance.

Using Your Judgment

Financial Reporting Problem: The Proctor & Gamble Company (P&G)

UYJ2.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to these financial statements and the accompanying notes to answer the following questions.

a. What were P&G's total assets at June 30, 2020? At June 30, 2019?

b. How much cash (and cash equivalents) did P&G have on June 30, 2020?

c. What were P&G's research and development costs in 2019? In 2020?

d. What were P&G's revenues in 2019? In 2020?

e. Using P&G's financial statements and related notes, identify items that may result in adjusting entries for deferrals and accruals.

f. What were the amounts of P&G's depreciation and amortization expense in 2019 and 2020?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ2.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. Which company had the greater percentage increase in total assets from 2019 to 2020?

b. Using the information in the income statements of these two companies, determine their 3-year average growth rates related to net sales and net income.

c. Which company had more depreciation and amortization expense for 2020? Provide a rationale as to why there is a difference in these amounts between the two companies.

Financial Statement Analysis Case: Kellogg Company

UYJ2.3 **Kellogg Company** has its headquarters in Battle Creek, Michigan. The company manufactures and sells ready-to-eat breakfast cereals and convenience foods including cookies, toaster pastries, and cereal bars.

Selected data from Kellogg Company's recent annual report follows (dollar amounts in millions).

	Current Year	Prior Year	2 Years Ago
Sales	$14,580	$14,792	$14,197
Gross profit %	34.73	41.26	38.28
Operating profit	1,024	2,837	1,562
Net cash flow less capital expenditures	1,211	1,170	1,225
Net earnings	633	1,808	961

In its annual reports, Kellogg Company has indicated that it plans to achieve sustainability of its operating results with operating principles that emphasize profit-rich, sustainable sales growth, as well as cash flow and return on invested capital. Kellogg believes its steady earnings growth, strong cash flow, and continued investment during a multi-year period demonstrates the strength and flexibility of its business model.

Instructions

a. Compute the percentage change in sales, operating profit, net cash flow less capital expenditures, and net earnings from year to year for the years presented.

b. Evaluate Kellogg's performance. Which trend seems most favorable? Which trend seems least favorable? What are the implications of these trends for Kellogg's sustainable performance objectives? Explain.

Accounting, Analysis, and Principles

UYJ2.4 The Amato Theater is nearing the end of the year and is preparing for a meeting with its bankers to discuss the renewal of a loan. The accounts listed below appeared in the December 31, 2025, trial balance.

Additional information is available as follows.

	Debit	Credit
Prepaid Advertising	$ 6,000	
Equipment	192,000	
Accumulated Depreciation—Equipment		$ 60,000
Notes Payable		90,000
Unearned Service Revenue		17,500
Ticket Revenue		360,000
Advertising Expense	18,680	
Salaries and Wages Expense	67,600	
Interest Expense	1,400	

1. The equipment has an estimated useful life of 16 years and a salvage value of $40,000 at the end of that time. Amato uses the straight-line method for depreciation.
2. The note payable is a one-year note given to the bank January 31 and bearing interest at 10%. Interest is calculated on a monthly basis.
3. Late in December 2025, the theater sold 350 coupon ticket books at $50 each. Two hundred of these ticket books have been used by year-end. The cash received was recorded as Unearned Service Revenue.
4. Advertising paid in advance was $6,000 and was debited to Prepaid Advertising. The company has used $2,500 of the advertising as of December 31, 2025.
5. Salaries and wages accrued but unpaid at December 31, 2025, were $3,500.

Accounting

Prepare any adjusting journal entries necessary for the year ended December 31, 2025.

Analysis

Determine Amato's income before and after recording the adjusting entries. Use your analysis to explain why Amato's bankers should be willing to wait for Amato to complete its year-end adjustment process before making a decision on the loan renewal.

Principles

Although Amato's bankers are willing to wait for the adjustment process to be completed before they receive financial information, they would like to receive financial reports more frequently than annually or even quarterly. What trade-offs, in terms of relevance and faithful representation, are inherent in preparing financial statements for shorter accounting time periods?

Developing Your Professional Skills

Codification Research Case

Recording transactions in the accounting system requires knowledge of the important characteristics of the elements of financial statements, such as assets and liabilities. In addition, accountants must understand the inherent uncertainty in accounting measures and distinctions between related accounting concepts that are important in evaluating the effects of transactions on the financial statements.

Instructions

Access the Conceptual Framework at the FASB website and provide explanations for the following items. (Provide paragraph citations.) When you have accessed the documents, you can use the search tool in your Internet browser.

a. The three essential characteristics of assets.

b. The three essential characteristics of liabilities.

c. Uncertainty and its effect on financial statements.

d. The difference between realization and recognition.

Additional Professional Resources

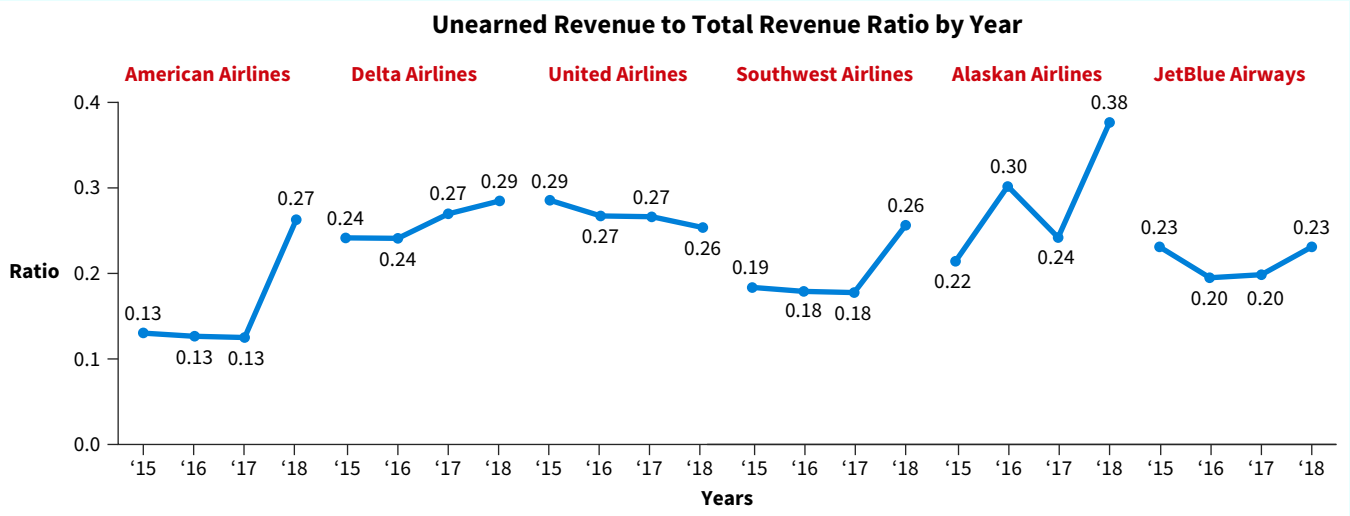
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualization to Evaluate Revenue Metrics

DA2.1 Benchmarking financial data against other companies in the same industry is critical for business leaders to understand how they stack up against the competition. Financial ratios are often meaningless without a relevant comparison.

Data visualizations help present financial data in a format that is quick and easy to evaluate. Visualizations can be based on a company's internal financial information, or they can be used to present industry data that companies can benchmark against. The following chart shows a comparison of unearned revenue to total revenue, by year, for six major airlines.



Required

For this exercise, you will use a dashboard of data visualizations to answer questions about revenue metrics and trends for companies in the airline industry.

Go to Wiley Course Resources for complete details and instructions.

DA2.2 Data visualizations can also be used to develop important insights into a company's performance or industry trends. These insights can help management make strategic decisions.

Required

For this exercise, you will use the same dashboard of visualizations from DA2.1 to answer questions about what insights you gained from your revenue analysis and how you would advise management that is considering a new airline.

Go to Wiley Course Resources for complete details and instructions.

Data Analytics and "Clean" Data

Excel

DA2.3 Clean data? Investors and creditors have unprecedented access to the financial data of public companies, but using that data for decision-making often requires that we spend some time cleaning the data to allow for the most effective analysis. For example, **Pfizer** lists "Revenues" on its consolidated statements of income, while **Johnson & Johnson** lists "Sales to Customers" on its consolidated statements of earnings. These may seem like minor naming differences, but when using analytics to pull data, precision and consistency counts.

Required

For this exercise, you will download data in from three public companies and then clean some of the data presented. You will then pull that data into Excel using the VLOOKUP function to analyze and present the data in a user-friendly format that will allow for industry trend analysis.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 9

Compare the accounting information systems under GAAP and IFRS.

As indicated in this chapter, companies must have an effective accounting system. In the wake of accounting scandals at U.S. companies like **Sunbeam**, **Rite-Aid**, **Xerox**, and **WorldCom**, U.S. lawmakers demanded higher assurance on the quality of accounting reports. Since the passage of the Sarbanes-Oxley Act (SOX), companies that trade on U.S. exchanges are required to place renewed focus on their accounting systems to ensure accurate reporting.

Following are the key similarities and differences between GAAP and IFRS related to accounting information systems.

Similarities

- International companies use the same set of procedures and records to keep track of transaction data. Thus, the material in Chapter 2 dealing with the account, general rules of debit and credit, and steps in the recording process—the journal, ledger, and chart of accounts—is the same under both GAAP and IFRS.
- Transaction analysis is the same under GAAP and IFRS but, as you will see in later chapters, different standards sometimes impact how transactions are recorded.
- Both the FASB and IASB go beyond the basic definitions provided in this text for the key elements of financial statements, that is, assets, liabilities, equity, revenues, and expenses.
- A trial balance under IFRS follows the same format as shown in the text. As shown in the text, dollar signs are typically used only in the trial balance and the financial statements. The same practice is followed under IFRS, using the currency of the country in which the reporting company is headquartered.

Differences

- Rules for accounting for specific events sometimes differ across countries. For example, European companies rely less on historical cost and more on fair value than U.S. companies. Despite the differences, the double-entry accounting system is the basis of accounting systems worldwide.
- Internal controls are a system of checks and balances designed to prevent and detect fraud and errors. While most public U.S. companies have these systems in place, many non-U.S. companies have neither completely documented them nor had an independent auditor attest to their effectiveness. Both of these actions are required under SOX. These enhanced internal control standards apply only to large public companies listed on U.S. exchanges.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting*, *IFRS Fourth Edition* exists as another resource.

CHAPTER 3

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Income Statement, Related Information, and Revenue Recognition

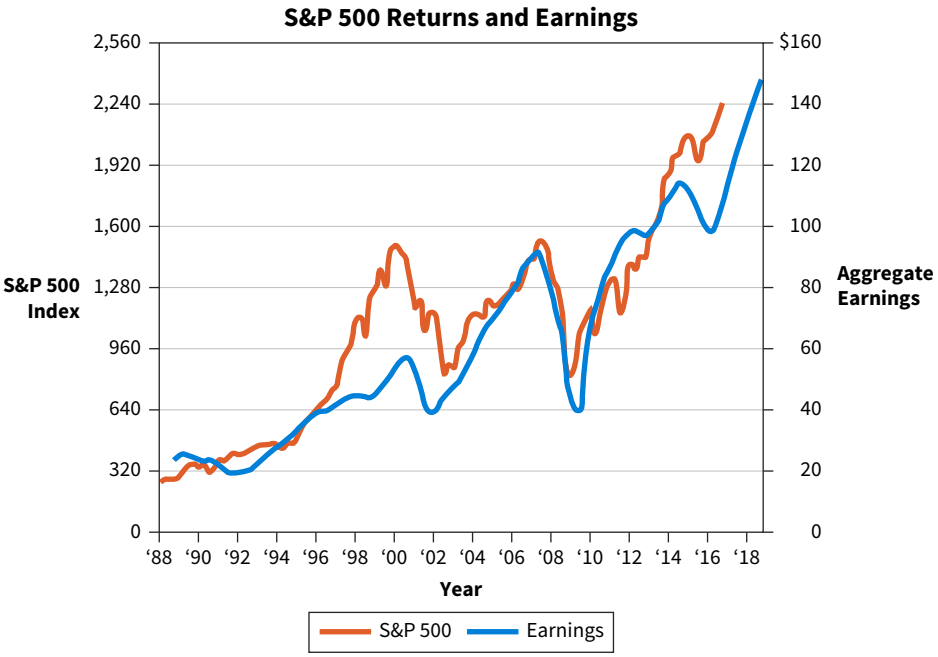
WHAT is the income statement?

The income statement is one of the primary financial statements. It measures a company's financial results—usually referred to as its profitability—over a period of time. The bottom line in any income statement, net income, is measured based on all revenues and gains in a period less expenses and losses incurred to generate those revenues. The higher the net income, the more positive is the assessment of company performance in that period.

WHY is information reported in the income statement important?

As you learned in Chapter 1, the objective of financial reporting calls for reporting information that helps in predicting future cash flows. Information in the income statement is directly related to that goal because revenues and expenses capture the effects of transactions in the past, which many times can be used to predict future operating results. In other words, the income statement is useful because it provides investors and creditors with information that helps them predict the amounts, timing, and uncertainty of future cash flows.

For example, consider the adjacent chart, which shows the paths of net income (earnings) and stock returns (S&P 500 Index) over the past 30 years for companies in the S&P 500. As you can see, income moves in tandem with stock returns. We can therefore say the income number is capturing the same information about future cash flows as that captured in prices. That is, reported income helps us meet the objective of financial reporting.



Source: Eddy Eifenbein, "2018 Estimate = $147.98," *Crossing Wall Street* (February 6, 2017).

HOW does the income statement provide useful information?

To provide useful information, companies report revenues, expenses, gains, and losses consistently over time and in a way that can be compared to other companies. Generally, companies prepare a multiple-step income statement, which highlights important relationships between revenues and expenses (e.g., sales and cost of goods sold). Within the income statement, companies also separate reporting of non-recurring gains and losses, as these items are less predictive relative to recurring revenues and expenses.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 3.1 Identify the uses, limitations, and basic content of an income statement.	**3.1 Income Statement** • Usefulness • Limitations • Content	Examples **3.1 Earnings per Share** Put It into Practice LO 3.1 **Prepare Multiple-Step and Single-Step Income Statements**
LO 3.2 Discuss the accounting for unusual income items.	**3.2 Reporting Special Income Items** • Discontinued operations • Other comprehensive income	Examples **3.2 Eliminated Product Line** **3.3 Discontinued Brand** **3.4 Operating Loss and Loss on Sale of Division** Put It into Practice LO 3.2 **Report Comprehensive Income Using the Two Statement Approach**
LO 3.3 Explain the reporting of stockholders' equity.	**3.3 Stockholders' Equity Statements** • Retained earnings • Statement of stockholders' equity • Balance sheet presentation	Examples **3.5 Statement of Stockholders' Equity** Put It into Practice LO 3.3 **Report Stockholders' Equity**
LO 3.4 Explain the revenue recognition principle.	**3.4 Revenue Recognition—The Fundamentals** • Revenue recognition principle • Overview of five-step model • Summary	Examples **3.6 Validity of Contract** **3.7 Performance Obligation(s)** **3.8 Separate Performance Obligation** **3.9 Variable Consideration** **3.10 Allocate Transaction Price** **3.11 Recognize Revenue** Put It into Practice LO 3.4 **Recognize Revenue**
LO 3.5 Describe the concept of earnings quality.	**3.5 Quality of Earnings** • Earnings management • Non-GAAP reporting • Fraudulent financial reporting • Response by the profession	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

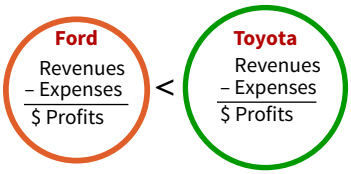
3.1 Income Statement

LEARNING OBJECTIVE 1

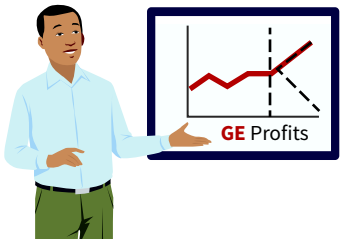
Identify the uses, limitations, and basic content of an income statement.

The **income statement** is the report that measures the success of company operations for a given period of time. It is also often called the statement of income or statement of earnings.[1]

- The business and investment community uses the income statement to determine profitability, investment value, and creditworthiness.
- The income statement provides investors and creditors with information that helps them predict the **amounts**, **timing**, **and uncertainty of future cash flows**.



Which company did better last year?



Where am I headed?

IBM Income for Year Ended 12/31/25	Recurring?
Revenues	
– Operating expenses	Yes
Operating income	
± Unusual items	No
$ Net income	?

Recurring items are more certain in the future.

Usefulness of the Income Statement

The income statement helps users of financial statements predict future cash flows in a number of ways. For example, investors and creditors use the income statement information to:

1. **Evaluate the past performance of the company.** Examining revenues and expenses indicates how the company performed and allows comparison of its performance to its competitors. For example, analysts use the income data provided by **Ford** to compare its performance to that of **Toyota**.
2. **Provide a basis for predicting future performance.** Information about past performance helps to determine important trends that, if continued, provide information about future performance. For example, **General Electric (GE)** at one time reported consistent increases in revenues. Obviously, past success does not necessarily translate into future success. However, analysts can better predict future revenues, and hence earnings and cash flows, if a reasonable correlation exists between past and future performance.
3. **Help assess the risk or uncertainty of achieving future cash flows.** Information on the various components of income—revenues, expenses, gains, and losses—highlights the relationships among them. It also helps to assess the risk of not achieving a particular level of cash flows in the future. For example, investors and creditors often separate **IBM**'s operating performance from other non-recurring sources of income because IBM primarily generates revenues and cash through its operations. Thus, results from continuing operations (operating income) usually have greater significance for predicting future performance than do results from non-recurring activities and events.

In summary, information in the income statement—revenues, expenses, gains, and losses—helps users evaluate past performance. It also provides insights into the likelihood of achieving a particular level of cash flows in the future.

[1]We will use the term **income statement** except in situations where a company reports other comprehensive income (discussed later in the chapter). In that case, we will use the terms **statement of comprehensive income** or **comprehensive income statement.**

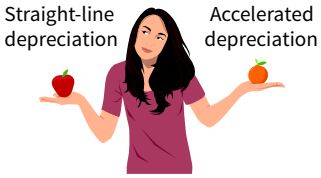
Limitations of the Income Statement

Because net income is based on estimates, a number of assumptions, as well as actual performance, income statement users need to be aware of certain limitations associated with its information. Some of these limitations include:

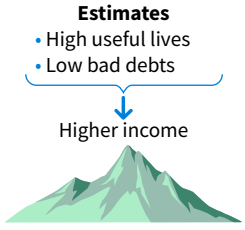
1. **Companies omit items from the income statement that they cannot measure reliably.** Current practice prohibits recognition of certain items from the determination of income even though the effects of these items can arguably affect the company's performance. For example, a company may not record unrealized gains and losses on certain investment securities in income when there is uncertainty that it will ever realize the changes in value. In addition, more and more companies experience increases in value due to brand recognition, reputation for excellent customer service, and outstanding product quality. A common framework for identifying and reporting these types of values is still lacking.
2. **Income numbers are affected by the accounting methods employed.** One company may depreciate its plant assets on an accelerated basis; another chooses straight-line depreciation. Assuming all other factors are equal, the first company will report lower income. In effect, we are comparing apples to oranges.
3. **Income measurement involves judgment.** For example, one company in good faith may estimate the useful life of an asset to be 20 years, while another company uses a 15-year estimate for the same type of asset. Similarly, some companies may make optimistic estimates of future warranty costs and bad debts, which result in lower expenses and higher income.

In summary, several limitations of the income statement reduce the usefulness of its information for predicting the amounts, timing, and uncertainty of future cash flows.

You left something out!



Is the income using these methods the same?



You might be too optimistic!

Content of the Income Statement

Net income results from revenue, expense, gain, and loss transactions. The following is a more in-depth discussion of these major elements of the income statement.

Elements of Financial Statements

Revenues. Inflows or other enhancements of assets of an entity or settlements of its liabilities during a period from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.

Expenses. Outflows or other using-up of assets or incurrences of liabilities during a period from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations.

Gains. Increases in equity (net assets) from peripheral or incidental transactions of an entity except those that result from revenues or investments by owners.

Losses. Decreases in equity (net assets) from peripheral or incidental transactions of an entity except those that result from expenses or distributions to owners.

The income statement summarizes these transactions. This method of income measurement, the **transaction approach**, focuses on the income-related activities that have occurred during the period.[2] The statement can further classify income by customer, product line, or

[2]The element definitions are found in "Elements of Financial Statements," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: FASB, 1985), paras. 78–89. The most common alternative to the transaction approach is the **capital maintenance approach** to income measurement. Under this approach, a company determines income for the period based on the change in equity, after adjusting for capital contributions (e.g., investments by owners) or distributions (e.g., dividends). The main drawback associated with the **capital maintenance approach** is that the components of income are not evident in its measurement. The Internal Revenue Service uses the capital maintenance approach to identify unreported income and refers to this approach as the "net worth check."

function, or by operating and nonoperating, continuing and discontinued, and regular and non-recurring categories.[3]

Multiple-Step Income Statement

Companies use either a multiple-step or single-step income statement. Illustration 3.1 presents an income statement for Cabrera Company, which sells outdoor apparel, using the multiple step format. (A single-step income statement is shown later in Illustration 3.3.) The **multiple-step income statement** is so named because it shows the several steps in determining net income. For example, the multiple-step statement reports net sales, gross profit, income from operations, income before income tax, and net income. A major advantage of this statement is that it distinguishes operating from non-operating activities.

ILLUSTRATION 3.1
Multiple-Step Income Statement

Cabrera Company
Income Statement
For the Year Ended December 31, 2025

Sales		
Sales revenue		$3,053,081
Less: Sales discounts	$24,241	
Sales returns and allowances	56,427	80,668
Net sales		**2,972,413**
Cost of goods sold		1,982,541
Gross profit		**989,872**
Operating expenses		
Selling expenses	453,028	
General and administrative expenses	350,771	803,799
Income from operations		**186,073**
Other revenues and gains		
Dividend revenue	98,500	
Gain on sale of equipment	72,910	171,410
		357,483
Other expenses and losses		
Interest on bonds and notes	96,060	
Loss on flood	30,000	126,060
Income before income tax		**231,423**
Income tax		66,934
Net income		**$ 164,489**
Earnings per common share ($164,489 ÷ 100,000)		$ 1.64

Here is a more detailed analysis of each of the components of the multiple-step income statement.

Net Sales Cabrera's net sales of $2,972,413 highlights the regular and hopefully recurring revenue of the company. Without revenue that is stable or increasing, it is unlikely that companies will be profitable in the long run. Revenue (often referred to as the top line) is considered by many to be as important as the bottom line (net income) because the bottom line may be affected by cutting expenses, or non-recurring revenue or expense items that may not be sustainable. As one expert noted "you won't generally grow net income much faster than revenues so keep an eye on the top line."

Gross Profit Cabrera deducts cost of goods sold from net sales to determine gross profit of $989,872. It is important to understand what gross profit is—and what it is not. Gross profit represents the merchandising profit of Cabrera. It is not a measure of Cabrera's overall

[3]The term "non-recurring" encompasses transactions and other events that are derived from developments outside the normal operations of the business.

profitability because operating expenses are not yet deducted. Nevertheless, managers and other interested parties closely watch the amount and trend of gross profit. Managers compare current gross profit with past years and with gross profit rates in the industry to determine the effectiveness of Cabrera's purchasing and pricing policies.

Operating Expenses Cabrera divides operating expenses into two categories: (1) selling expense of $453,028 and (2) general and administrative expense of $350,771. (Some companies choose to report operating expenses in one line and identify them as selling, general, and administrative expenses.) The individual operating expenses are shown in **Illustration 3.2**.

ILLUSTRATION 3.2 Expense Detail

Selling expenses		General and administrative expenses	
Sales salaries and commissions	$202,644	Officers' salaries	$186,000
Sales office salaries	59,200	Office salaries	61,200
Travel and entertainment	48,940	Legal and professional services	23,721
Advertising expense	38,315	Utilities expense	23,275
Delivery expense	41,209	Insurance expense	17,029
Shipping supplies and expense	24,712	Depreciation of building	18,059
Postage and stationery	16,788	Depreciation of office equipment	16,000
Telephone and Internet expense	12,215	Stationery, supplies, and postage	2,875
Depreciation of sales equipment	9,005	Miscellaneous office supplies	2,612
	$453,028		$350,771
		Total operating expenses	
		$803,799	

If Cabrera were a manufacturing rather than a merchandising company, certain costs may be charged to cost of goods sold rather than to operating expense. For example, the depreciation of manufacturing factory equipment may be capitalized and reported as part of inventory cost rather than as an operating expense. Often, companies will identify a specific expense, such as research and development expense or restructuring expenses, as a separate line item due to its significance.

Income from Operations Disclosing income from a company's core operations of $186,073 highlights the difference between regular and non-recurring or incidental activities. This disclosure is important to financial statement users because it helps distinguish between the types of transactions that are likely to happen in the future and those that are not. Users want to know what Cabrera's results are related to its ongoing major or central operations—its core earnings. This disclosure helps users recognize that incidental or non-recurring activities are unlikely to continue at the same level. Furthermore, disclosure of operating earnings may assist in comparing different companies and assessing operating efficiencies.

Income Before Income Tax Non-operating activities consist of various revenues and expenses and gains and losses that are unrelated to the company's main line of operations. Let's discuss what Cabrera lists as non-operating items:

- **Dividend revenue**. As a general practice, companies list dividend and interest revenue from investments as a non-operating activity.
- **Gain on sale of equipment**. Cabrera is in the business of selling outdoor apparel, so when it records a gain from selling some equipment it no longer uses, this gain is not part of the company's recurring operations.
- **Interest on bonds and notes**. As a general practice, companies list interest expense on liabilities as non-operating items.
- **Loss on flood**. Cabrera suffered a loss from a flood, which (hopefully) is an infrequent and unusual item. Cabrera would provide more detail about this unusual event in the notes to the financial statements.

For Cabrera, Other revenues and gains and Other expenses and losses are considered non-operating because these items are unrelated to Cabrera's main line of business. The non-operating revenues and gains are added to Income from operations, and the non-operating

expenses and losses are subtracted from Income from operations, to arrive at Income before income tax of $231,423.

Gains and losses are sometimes considered **unusual or infrequent, or both**. These are defined as follows.

- **Unusual.** High degree of abnormality and of a type clearly unrelated to, or only incidentally related to, the ordinary activities of the company, taking into account the environment in which it operates.
- **Infrequency of occurrence.** Type of transaction that is not reasonably expected to recur in the foreseeable future, taking into account the environment in which the company operates.

Common types of unusual or infrequent gains and losses or both are as follows.

- Losses on write-down (impairment) of receivables; inventories; property, plant, and equipment; goodwill or other intangible assets.
- Restructuring charges (costs incurred in rearranging operations, such as laying off workers, closing plants, and shifting production to new locations).
- Other gains and losses from sale or abandonment of property, plant, and equipment.
- Effects of a strike, including those against competitors and major suppliers.
- Gains and losses on extinguishment (redemption) of debt obligations.
- Gains or losses on sale of investment securities. [1] (See the FASB Codification References near the end of the chapter.)

When gains or losses are unusual or infrequent or both, additional disclosure is often needed in the notes to the financial statements. Users of the income statement can then understand the effect of these gains or losses on net income and future cash flows.

The distinctions between revenues and gains, and between expenses and losses, depend largely on the typical activities of the company. For example, when **McDonald's** sells a hamburger, it records the selling price as revenue. However, when McDonald's sells land, it records any excess of the selling price over the book value as a gain. This difference in treatment results because the sale of the hamburger is part of McDonald's regular operations. The sale of land is not.

Here is another example that illustrates the importance of segregating operating from non-operating items. In one situation, **IBM** began providing more detail regarding its Other gains and losses. It had previously included these items in its selling, general, and administrative expenses, with little disclosure. For example, if IBM previously sold off one of its buildings at a gain, it included this gain in the selling, general, and administrative expense line item, thus reducing that expense. This made it appear that the company had done a better job of controlling operating expenses than it actually had.

Income Tax Cabrera reports income tax expense, also referred to as income tax provision, of $66,934**.** Income taxes are a significant expense for many companies. For example, when the United States dropped its income tax rate significantly in 2018, half of the combined net income growth reported by the largest 300 U.S. companies for the first quarter of that year stemmed from a decline in the tax rate. Analysts watch very closely the relationship of income tax to reported net income. In some cases, due to losses carried over from previous periods, the tax rate may be significantly lower in that year, resulting in much higher income that year. If the loss carryover is a one-time event, users need to understand that the tax rate in the future will be higher.

Net Income Income tax expense is then deducted to arrive at net income. The net income or loss is the number that many analysts focus on to assess whether the company has been successful. Many argue that nothing good happens to a company unless there are profits and lots of them. The argument is that market value is the present value of expected future profits. The higher the profits, the higher the market value, with likely dividend increases as well. But be careful about focusing solely on net income.

We cannot overemphasize the importance of reporting components of net income. Indeed, most decision-makers find the **parts of a financial statement** to be more useful

than the whole. As we indicated earlier, investors and creditors are interested in predicting the amounts, timing, and uncertainty of future income and cash flows. Having income statement elements shown in some detail and in comparison with prior years' data allows decision-makers to better assess future income and cash flows.

Earnings per Share The computation of earnings per share is usually straightforward, as follows.

$$\text{Earnings per Share (EPS)} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted-Average Number of Common Shares Outstanding}}$$

Note that **earnings per share (EPS)** measures the number of dollars earned by each share of common stock. It does not represent the dollar amount paid to stockholders in the form of dividends.

Cabrera has 100,000 shares of common stock outstanding. This is the only stock outstanding, and Cabrera has no other equity instruments outstanding. Cabrera is required to present a basic per share amount of $1.64 ($164,489 ÷ 100,000 shares) on the face of the income statement. If Cabrera has 100,000 shares outstanding on January 1 and issues another 100,000 shares on July 1, the weighted-average number of shares outstanding for the calendar year would be 150,000, as follows.

	Shares Outsanding		Fraction of Period		Weighted Shares
January–June	100,000	×	6/12	=	50,000
July–December	200,000	×	6/12	=	100,000
					150,000

The basic per share amount disclosed on the income statement would then be $1.10 ($164,489 ÷ 150,000 shares).

Example 3.1 Earnings per Share

FACTS Lancer Inc. reports net income of $350,000. It declares and pays preferred dividends of $50,000 for the year. The weighted-average number of common shares outstanding during the year is 100,000 shares.

QUESTION What is Lancer's earnings per share?

SOLUTION

Lancer computes earnings per share of $3, as follows.

$$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted-Average Number of Common Shares Outstanding}} = \text{Earnings per Share}$$

$$\frac{\$350{,}000 - \$50{,}000}{100{,}000} = \$3$$

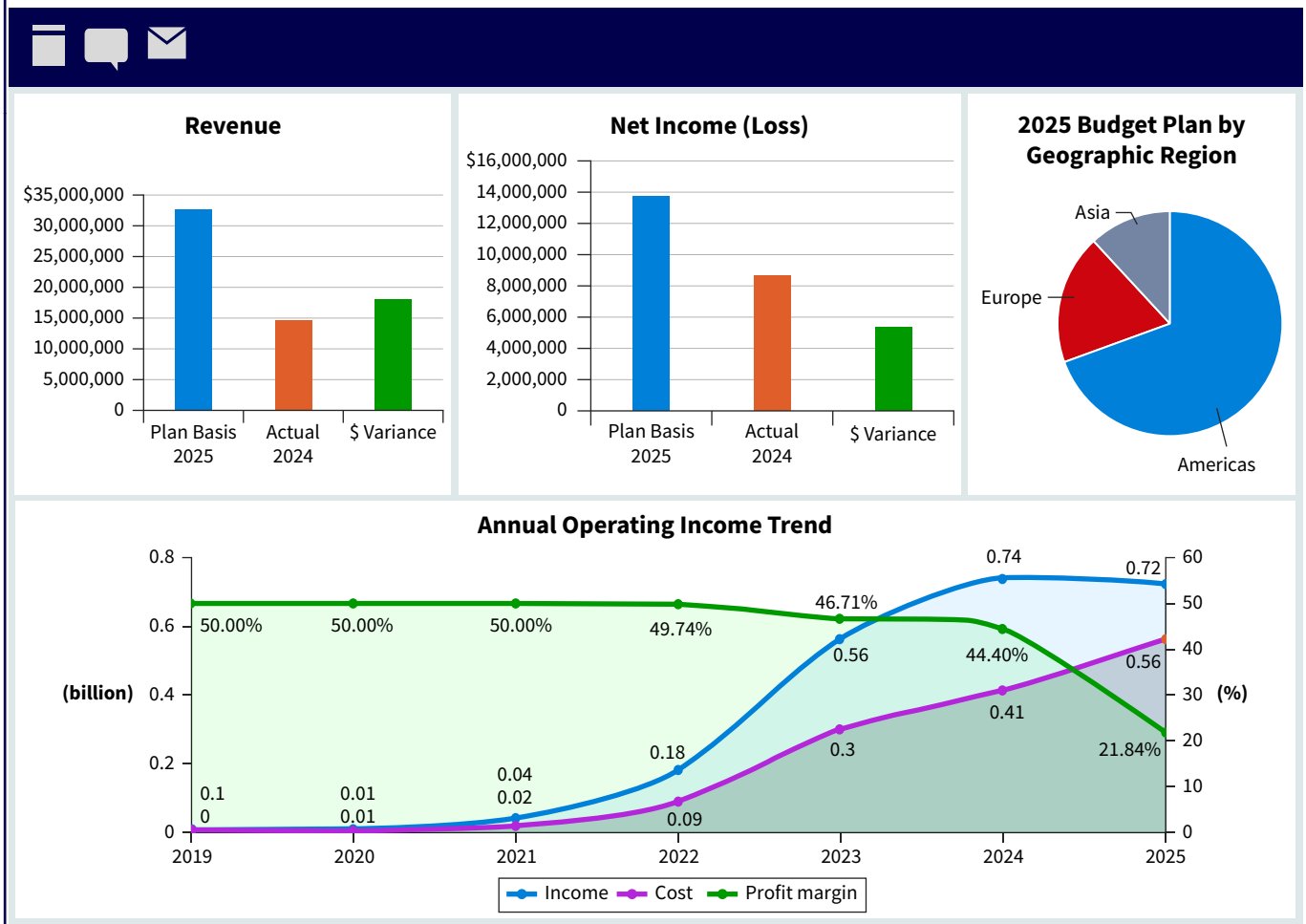
Company prospectuses, proxy material, and annual reports to stockholders commonly use the "net income per share" or "earnings per share" ratio. The financial press, statistical services like **S&P Global Ratings**, and Wall Street securities analysts also highlight EPS. Because of its importance, **companies must disclose earnings per share on the face of the income statement**. [2][4] A word of caution related to earnings per share. Due to very low interest rates these days as a result of the Covid-19 pandemic, companies have been borrowing

[4]In this chapter, we discuss only earnings per share or net loss per share where a company has only common stock. Another measure shown on the face of the income statement (when applicable) is diluted earnings per share, which gives effect to all dilutive potential common shares that were outstanding during the reporting period. This concept is discussed in Chapter 15.

funds to buy back stock, which reduces shares outstanding and increases earnings per share. This creates the perception that earnings are increasing when in fact they are not.

Analytics in Action: Income Statement Dashboards

The income statement provides a wealth of information to users of the financial statements, whether you are an investor or creditor making capital allocation decisions, or a manager making internal business decisions. To organize and track the vast amounts of data that goes into the income statement, users can create data visualizations, or dashboards, to give an easy visual of key metrics. A sample dashboard might look like the following.



As indicated, the elements in the dashboard highlight key income subtotals, compare actual to plan, and present a trend over several years for income.

Managers can pull data for their dashboards directly from their accounting system and update the metrics on a daily basis. External users may rely on regular public reporting of financial information, which public companies must report in eXtensible Business Reporting Language (XBRL), which tags elements of the financial statements and allows users to digitize data points in a company's financial statements. With this data, users can easily track trends in the income statement and quickly investigate any irregularities.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Single-Step Income Statement

As indicated earlier, companies use one of two forms of the income statement. The second type of income statement is referred to as the **single-step income statement**. The statement is so named because only one step, subtracting total expenses from total revenues, is required in determining net income (or net loss). In a single-step statement, all data are classified into two categories:

1. **Revenues**, which include both operating revenues and nonoperating revenues and gains (for example, interest revenue and gain on sale of equipment).

2. **Expenses**, which include cost of goods sold, operating expenses, and nonoperating expenses and losses (for example, interest expense, loss on sale of equipment, or income tax expense).

Illustration 3.3 shows a single-step statement for Cabrera Company.

ILLUSTRATION 3.3 Single-Step Income Statement

Cabrera Company
Income Statement
For the Year Ended December 31, 2025

Revenues	
Net sales	$2,972,413
Dividend revenue	98,500
Gain on sale of equipment	72,910
Total revenues	3,143,823
Expenses	
Cost of goods sold	1,982,541
Selling expenses	453,028
Administrative expenses	350,771
Interest expense on bonds and notes	96,060
Loss on flood	30,000
Income tax	66,934
Total expenses	2,979,334
Net income	**$ 164,489**
Earnings per common share ($164,489 ÷100,000)	$ 1.64

Note that Cabrera's net income amount is the same whether using the single-step or multiple-step income statement. There are two primary reasons for using the single-step form.

1. A company does not realize any type of profit or income until total revenues exceed total expenses, so it makes sense to divide the statement into these two categories.
2. The form is simple and easy to read.

However, while the FASB allows companies to report their income statement using the single-step or multiple-step format, the Securities and Exchange Commission (SEC) dictates otherwise for public companies. Tasked with protecting investors and capital markets, the SEC requires their registrants to report net income using the multiple-step format, separating operating and non-operating income.

Accounting Matters

Top Line or Bottom Line?

The importance of the components of income, as well as the bottom line, is illustrated in the recent case of **Chipotle**. Its stock price had quadrupled in five years and for good reason. The company had been reporting surprisingly high income and investors were clamoring to buy. However, that pattern was broken—that is, Chipotle posted solid earnings, but investors sold. The reason? Analysts attribute the sell-off to Chipotle missing its target for **revenues**. The stock fell 21%, from $404 to $317, in a day.

The focus on the top line, revenue, arises because market expectations for revenues do not seem to jive with the companies' optimistic profit picture. And while companies might report a surprise in earnings, analysts will be focusing on revenues. Companies have been able to cut costs to compensate—laying off workers, squeezing remaining staff, and using technology to run more efficiently—but there's a limit to how much you can squeeze your workers and use technology to produce more. U.S. companies are just about as lean as any time in history.

As one analyst noted (in this economic environment), "you won't be able to grow earnings much faster than revenue. . .. Analysts will have to revise down their earnings." So watch the top line, as well as the bottom line.

Sources: Associated Press, "Why Some Stocks Are Sinking Despite Big Profits," *The New York Times* (August 12, 2012); and N. Russolillo, "Is Shake Shack Losing Its Shine?" *The Motley Fool* (February 21, 2018).

Put It into Practice LO 3.1

Prepare Multiple-Step and Single-Step Income Statements

FACTS The following information is related to Shark Inc.

Loss related to fire damage	$500,000	Income taxes payable	$ 32,000
General and administrative expense	200,000	Selling expense	25,000
Sales revenue	4,000,000	Sales discounts	6,000
Cash	40,000	Warranty liability	9,000
Interest expense	10,000	Interest revenue	11,000
Accounts payable	30,000	Accounts receivable	14,000
Sales returns and allowances	5,000	Retained earnings	45,000
Gain on sale of equipment	8,000	Cost of goods sold	2,220,000

INSTRUCTIONS

Assuming that the tax rate is 30% and the weighted-average number of common shares outstanding is 100,000, prepare the following for the year ended December 31, 2025.

a. Multiple-step income statement for Shark Inc.

b. Single step income statement for Shark Inc.

SOLUTION

a.

Shark Inc.
Income Statement
For the Year Ended December 31, 2025

Sales		
Sales revenue		$4,000,000
Less: Sales discounts	$ 6,000	
Sales returns and allowances	5,000	11,000
Net sales		3,989,000
Cost of goods sold		2,220,000
Gross profit		1,769,000
Operating expenses		
Selling expenses	25,000	
General and administrative expenses	200,000	225,000
Income from operations		1,544,000
Other revenues and gains		
Interest revenue	11,000	
Gain on sale of equipment	8,000	19,000
		1,563,000
Other expenses and losses		
Interest expense	10,000	
Loss on fire	500,000	510,000
Income before income tax		1,053,000
Income tax ($1,053,000 × .30)		315,900
Net income		$ 737,100
Earnings per common share ($737,100 ÷ 100,000)		$7.37

b.

Shark Inc.
Income Statement
For the Year Ended December 31, 2025

Revenues		
Net sales	$3,989,000	
Interest revenue	11,000	
Gain on sale of equipment	8,000	
Total revenues		$4,008,000
Expenses		
Cost of goods sold	2,220,000	
Selling expenses	25,000	
General and administrative expenses	200,000	
Interest expense	10,000	
Loss on fire	500,000	
Income tax ($1,053,000 × .30)	315,900	
Total expenses		3,270,900
Net income		$ 737,100
Earnings per common share ($737,100 ÷ 100,000)		$ 7.37

As shown in Illustrations 3.1 and 3.3 with Cabrera Company, the bottom-line net income and earnings per share are the same using a single-step or multiple-step income statement presentation, but the multiple-step format provides users with better information to predict future profitability.

Note that the other accounts listed in the facts that were not included in the income statements (e.g., Accounts Receivable, Income Taxes Payable, and Retained Earnings) are reported as assets, liabilities, and equity on the balance sheet.

3.2 Reporting Special Income Items

LEARNING OBJECTIVE 2

Discuss the accounting for unusual income items.

What should be reported in net income and where it should be reported is controversial. For example:

- Should companies report a gain or loss on sale of an investment as part of net income or report it directly in stockholders' equity?
- Should a company report a loss on discontinued operations differently than interest expense?

What we need is consistent and comparable income reporting practices. Developing a framework for reporting income components is important to ensure useful information.

So, what to do? The accounting profession requires that companies record most items, including unusual or infrequent ones, as part of net income. In addition, companies are sometimes required to highlight items in the income statement so that users can better determine the long-run earning power of the company. Two special items are discontinued operations and other comprehensive income.

Discontinued Operations

A **discontinued operation** occurs when two things happen.

1. A company eliminates the results of operations of a component of the business. A component comprises operations and cash flows that can be clearly distinguished, both operationally and for financial reporting purposes.
2. The elimination of a component that represents **a strategic shift,** having a major effect on the company's operations and financial results. A strategic shift generally includes the disposal of (1) a major line of business, (2) a major geographical area, or (3) a major equity method investment. **[3]**

For example, **Starbucks** operates its namesake cafés as one component of its operations. It also packages and sells coffee, tea, and other beverages through many different retail and grocery outlets. If Starbucks were to stop selling products through grocery stores, this would be considered a strategic shift in its business. The company would then report a discontinued operation.

Example 3.2 Eliminated Product Line

FACTS Softso has the following product lines that it manufactures and sells: beauty care, health care, and baby care. Each product line represents a major line of business. Within these product lines, the company has a total of 18 brands. Each brand is considered a separate component as it comprises operations and cash flows that can be clearly distinguished, both operationally and for financial reporting purposes. Softso decides to eliminate the baby-care product line because it is suffering substantial losses.

QUESTION How should Softso report the elimination of the baby-care product line?

SOLUTION

Softso should report the elimination of the baby-care product line as a discontinued operation because the baby-care line represents a major line of business. Its disposal represents a major part of Softso's operations (a strategic shift).

An alternative scenario is examined in Example 3.3

Example 3.3 Discontinued Brand

FACTS Refer to the facts in Example 3.2 but now assume that Softso decides to remain in the baby-care business. However, it will discontinue the BoPeep brand in this product line because it is very unprofitable.

QUESTION How should Softso report the discontinuation of the BoPeep brand?

SOLUTION

Softso should not report the elimination of this brand as a discontinued operation because it does not represent a major part of Softso's operations (disposing of it is not considered a strategic shift).

As indicated, the reporting of a discontinued operation involves strategic shifts that are substantial in nature. Here are some additional examples.

1. The sale of a product line that represents 15% of a company's total revenues.
2. The sale of operations in a geographical area that represents 20% of a company's total assets.
3. The sale of a component that is an equity investment that represents 20% of a company's total assets.

In a separate category on the income statements, companies report the gain or loss from **disposal of a component of a business**. In addition, companies report the **results of operations of a component that has been or will be disposed of** separately from continuing operations. Companies show the effects of discontinued operations net of tax after continuing operations. **[4]**

Example 3.4 Operating Loss and Loss on Sale of Division

FACTS Multiplex Products, Inc., a highly diversified company, decides to discontinue its electronics division. During the current year, the electronics division lost $300,000 (net of tax). Multiplex sold the division at the end of the year at a loss of $500,000 (net of tax). Multiplex determines that the electronics division discontinuation meets the strategic shift criteria because the division is a major line of business (its assets exceed 20% of Multiplex's total assets). For the current year, Multiplex reports Income from continuing operations of $20,000,000.

QUESTION How would you advise Multiplex to report this discontinued operation in the income statement?

SOLUTION

The reporting of discontinued operations for Multiplex is as follows.

Income from continuing operations		$20,000,000
Discontinued operations		
Loss from operation of discontinued electronics division (net of tax)	$300,000	
Loss from disposal of electronics division (net of tax)	500,000	(800,000)
Net income		$19,200,000

Notice the use of the phrase **Income from continuing operations** in Example 3.4. That phrase is used only when gains or losses on discontinued operations occur. It highlights that all items up to that point represent the results of continuing operations. After the results of discontinued operations are included, then the company reaches the final net income amount.

A company that reports a discontinued operation must report on the face of the income statement the per share effect of income from continuing operations and net income. In addition, it must report per share amounts for discontinued items either on the face of the income statement or in the notes to the financial statements.[5]

To illustrate, consider the income statement for Poquito Industries Inc., shown in **Illustration 3.4**. Poquito had 100,000 shares outstanding for the entire year. Notice the order in which Poquito shows the data, with per share information at the bottom. The Poquito income statement is highly condensed. Poquito would need to describe items such as "Other expenses and losses" and "Discontinued operations" fully and appropriately in the statement or related notes.

[5]In practice, a company will generally report only one line on the income statement, such as "Loss on discontinued operations, net of tax," and then in the notes explain the two components of the loss that total $800,000. *For homework purposes, report both amounts on the face of the income statement, net of tax, if both amounts are provided.*

ILLUSTRATION 3.4 Income Statement

Poquito Industries Inc.
Income Statement
For the Year Ended December 31, 2025

Sales revenue		$1,420,000
Cost of goods sold		600,000
Gross profit		820,000
Selling and administrative expenses		320,000
Income from operations		500,000
Other revenues and gains		
Interest revenue		10,000
Other expenses and losses		
Loss on disposal of part of Textile Division	$ 5,000	
Loss on sale of investments	30,000	
Interest expense	15,000	50,000
Income before income tax		460,000
Income tax		184,000
Income from continuing operations		276,000
Discontinued operations		
Income from operations of Pizza Division, less applicable income tax of $24,800	**54,000**	
Loss on disposal of Pizza Division, less applicable income tax of $41,000	**90,000**	**(36,000)**
Net income		**$ 240,000**
Per share		
Income from continuing operations		**$2.76**
Income from operations of discontinued division, net of tax		**0.54**
Loss on disposal of discontinued division, net of tax		**0.90**
Net income		**$2.40**

Intraperiod Tax Allocation

As indicated in Illustration 3.4, companies report discontinued operations on the income statement net of tax. The allocation of tax to this item is called **intraperiod tax allocation**, that is, allocation within the income statement of a period. It relates the income tax expense of the fiscal period to the specific items that give rise to the amount of the income tax expense.

Intraperiod tax allocation helps financial statement users better understand the impact of income taxes on the various components of net income. For example, readers of financial statements will understand how much income tax expense relates to "Income from continuing operations" and how much to discontinued operations.

- Intraperiod tax allocation helps users to better predict the amount, timing, and uncertainty of future cash flows.
- In addition, intraperiod tax allocation discourages statement readers from using pretax measures of performance when evaluating financial results, and thereby recognizes that income tax expense is a real cost.

Companies use intraperiod tax allocation on the income statement for (1) income from continuing operations and (2) discontinued operations. The general concept is **"let the tax follow the income."**

To compute the income tax expense attributable to "Income from continuing operations," a company computes the income tax expense related to both the revenue and expense transactions as well as other income and expense used in determining this income subtotal. (In this computation, the company does not consider the tax consequences of items excluded from the

determination of "Income from continuing operations.") Companies then associate a separate tax effect for discontinued operations. Here, we look in more detail at the calculation of intraperiod tax allocation for a discontinued gain or discontinued loss.

Discontinued Operations (Gain)

In applying the concept of intraperiod tax allocation, assume that Beesly Enterprises has income before income tax of $250,000. It has a gain of $100,000 from a discontinued operation. Assuming a 30% income tax rate, Beesly presents the information on the income statement as shown in **Illustration 3.5**.

Income before income tax		$250,000
Income tax		75,000
Income from continuing operations		175,000
Gain on discontinued operations	$100,000	
Less: Applicable income tax	30,000	70,000
Net income		$245,000

ILLUSTRATION 3.5 Intraperiod Tax Allocation, Discontinued Operations Gain

Beesly determines the income tax of $75,000 ($250,000 × .30) to arrive at "Income from continuing operations." The company shows a separate tax effect of $30,000 related to the "Gain on discontinued operations." When a company experiences a gain on discontinued operations, the company owes tax on the gain. Therefore, Beesly's total income tax expense for the period is $105,000 ($75,000 + $30,000). With intraperiod tax allocation, users can see that $75,000 of total income tax is attributable to continuing operations. The other $30,000 of income tax expense is attributable to a discontinued operation and therefore will not occur again in the next period.

Discontinued Operations (Loss)

To illustrate the reporting of a loss from discontinued operations, assume that Beesly Enterprises has income before income tax of $250,000. It also has a loss from discontinued operations of $100,000. Assuming a 30% tax rate, Beesly presents the income tax on the income statement as shown in **Illustration 3.6**.

Income before income tax		$250,000
Income tax		75,000
Income from continuing operations		175,000
Loss from discontinued operations	$100,000	
Less: Applicable income tax reduction	30,000	70,000
Net income		$105,000

ILLUSTRATION 3.6 Intraperiod Tax Allocation, Discontinued Operations Loss

When a company experiences a loss on discontinued operations, it receives a tax benefit, or a reduction in overall income tax expense. This "tax savings" is netted with the loss from discontinued operations and has the effect of reducing the overall loss. Therefore, Beesly's total income tax expense for the period is $45,000 ($75,000 − $30,000). With intraperiod tax allocation, users can see that $75,000 is attributable to continuing operations. The $30,000 of tax savings is attributable to a discontinued operation and therefore will not occur again in the next period.

Beesly may also report the tax effect of a discontinued item by means of a note disclosure, as shown in **Illustration 3.7**.

ILLUSTRATION 3.7 Note Disclosure of Intraperiod Tax Allocation

Income before income tax	$250,000
Income tax	75,000
Income from continuing operations	175,000
Loss on discontinued operations, less applicable income tax reduction (Note 1)	70,000
Net income	$105,000

Note 1: During the year, the Company suffered a loss on discontinuing operations of $70,000, net of applicable income tax reduction of $30,000.

Other Comprehensive Income

Global View

GAAP and IFRS report comprehensive income similarly. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

In recent years, the use of fair values for measuring assets and liabilities has increased. As a result, reporting of gains and losses related to changes in fair value has become controversial. Because fair values are continually changing, some argue that recognizing these gains and losses in net income is misleading. The FASB agrees and has identified a limited number of transactions that should not be recorded in the income statement. One example is unrealized gains and losses on available-for-sale debt investments.[6] These gains and losses are excluded from net income, thereby reducing volatility in net income due to fluctuations in fair value. (We discuss these unrealized gains and losses in Chapter 16.)

So how do companies report these changes in fair value? They are reported in a measure called comprehensive income (see **Global View**).

- **Comprehensive income** includes all changes in equity during a period **except** those resulting from investments by owners and distributions to owners.
- Comprehensive income, therefore, includes everything that is included on the income statement **plus** all gains and losses that bypass net income but affect stockholders' equity.
- The gains and losses that bypass the income statement are referred to as **other comprehensive income**.

Companies must display the components of other comprehensive income in one of two ways:

1. **One statement approach.** A single continuous statement. This approach is often referred to as the statement of comprehensive income.
2. **Two statement approach.** Two separate, but consecutive, statements of net income and other comprehensive income. This approach uses the traditional term "income statement" for the first statement and "comprehensive income statement" for the second statement.

Under either approach, companies display each component of net income and each component of other comprehensive income. In addition, net income and comprehensive income are reported. Companies are not required to report earnings per share information related to comprehensive income. **[5]**

We illustrate these two alternatives in the next two sections. In each case, assume that Trader Bob's Organic Groceries reports the following information for 2025: sales revenue $800,000, cost of goods sold $600,000, operating expenses $90,000, and an unrealized holding gain on available-for-sale debt investments of $30,000, net of tax.

[6] We further discuss available-for-sale debt investments in Chapter 16. Additional examples of other comprehensive items are translation gains and losses on foreign currency, unrealized gains and losses on certain hedging transactions, and adjustments related to pensions. Corrections of errors and changes in accounting principles are not considered other comprehensive income items.

One Statement Approach

In this approach, the traditional net income is a subtotal, with total comprehensive income shown as a final total. The combined statement has the advantage of not requiring the creation of a new financial statement. However, burying net income as a sub-total on the statement is a disadvantage. **Illustration 3.8** shows the one statement format for Trader Bob's.

Trader Bob's Organic Groceries
Statement of Comprehensive Income
For the Year Ended December 31, 2025

Sales revenue	$800,000
Cost of goods sold	600,000
Gross profit	200,000
Operating expenses	90,000
Net income	110,000
Other comprehensive income	
Unrealized holding gain, net of tax	30,000
Comprehensive income*	$140,000

Accumulates in → Retained Earnings

Accumulates in → Accumulated Other Comprehensive Income

Permanent accounts reported on balance sheet

*Excludes investments by owners (sale of common stock) and distribution to owners (payment of dividends)

ILLUSTRATION 3.8 One Statement Format: Comprehensive Income

Two Statement Approach

Illustration 3.9 shows the two statement format for Trader Bob's. Reporting comprehensive income in a separate statement indicates that the gains and losses identified as other comprehensive income have the same status as traditional gains and losses.

Trader Bob's Organic Groceries
Income Statement
For the Year Ended December 31, 2025

Sales revenue	$800,000
Cost of goods sold	600,000
Gross profit	200,000
Operating expenses	90,000
Net income	$110,000

Accumulates in → Retained Earnings

Comprehensive Income Statement
For the Year Ended December 31, 2025

Net income	$110,000
Other comprehensive income	
Unrealized holding gain, net of tax	30,000
Comprehensive income	$140,000

Accumulates in → Accumulated Other Comprehensive Income

Permanent accounts reported on balance sheet

ILLUSTRATION 3.9 Two Statement Format: Comprehensive Income

As you will see in the next section, the total amount of "Other comprehensive income" is also reported on the statement of stockholders' equity and on the balance sheet in the stockholders' equity section. On the balance sheet, the total amount is listed as Accumulated Other Comprehensive Income.

Put It into Practice LO 3.2

Report Comprehensive Income Using the Two Statement Approach

FACTS The following information is related to Diego Company for the year 2025.

Cost of goods sold	$260,000	Loss on plastics division operations related to discontinued operations	$ 60,000
Other revenues and gains	5,600	Net sales	440,000
Unrealized gain on available-for-sale securities	15,000	Other expenses and losses	9,600
Gain on disposal of plastics division related to discontinued operations	50,000	Operating expenses	130,000

INSTRUCTIONS

Prepare a multiple-step income statement and a comprehensive income statement for Diego Company (the two statement approach). The income tax rate is 30%, and the weighted-average number of common shares outstanding is 10,000.

SOLUTION

Diego Company
Income Statement
For the Year Ended December 31, 2025

Sales revenue		$440,000
Cost of goods sold		260,000
Gross profit		180,000
Operating expenses		130,000
Income from operations		50,000
Other revenues and gains	$5,600	
Other expenses and losses	9,600	(4,000)
Income before income tax		46,000
Income tax (30%)		13,800
Income from continuing operations		32,200
Discontinued operations		
Loss on operations of discontinued operation, net of tax ($18,000)	42,000	
Gain from disposal of discontinued operation, net of tax ($15,000)	35,000	(7,000)
Net income		$25,200
Per share of common stock		
Income from continuing operations		$ 3.22
Discontinued operations		0.70
Net income		$ 2.52

Diego Company
Comprehensive Income Statement
For the Year Ended December 31, 2025

Net income	$ 25,200
Unrealized holding gain on available-for-sale debt investment, net of tax of $4,500	10,500
Comprehensive income	$ 35,700

3.3 Stockholders' Equity Statements

LEARNING OBJECTIVE 3

Explain the reporting of stockholders' equity.

Retained Earnings

Let's review some of the items that impact retained earnings:

1. Net income increases retained earnings, but a net loss decreases retained earnings.
2. Both cash dividends and stock dividends decrease retained earnings.
3. Changes in accounting principles (discussed in the chapter appendix) and prior period adjustments due to errors may increase or decrease retained earnings, generally as an adjustment to the beginning balance of retained earnings. Adjustments for accounting changes and errors are made net of tax.

Companies may show retained earnings information in different ways. For example, some companies prepare a separate retained earnings statement, as **Illustration 3.10** shows.

ILLUSTRATION 3.10 Retained Earnings Statement

Stricker Inc.
Retained Earnings Statement
For the Year Ended December 31, 2025

Retained earnings, January 1, as reported		$1,050,000
Correction for understatement of net income in prior period (net of tax) (inventory error)		50,000
Retained earnings, January 1, as adjusted		1,100,000
Add: Net income		360,000
		1,460,000
Less: Cash dividends	$100,000	
Stock dividends	200,000	300,000
Retained earnings, December 31		$1,160,000

The reconciliation of the beginning to the ending balance in retained earnings provides information about why retained earnings increased or decreased during the year. The association of dividend distributions with net income for the period indicates what management is doing with earnings: It may be "plowing back" into the business part or all of the earnings, distributing all current income, or distributing current income plus the accumulated earnings of prior years.

Companies often restrict retained earnings to comply with contractual requirements, board of directors' policy, or current necessity. Generally, companies disclose in the notes to the financial statements the amounts of restricted retained earnings.

- In some cases, companies transfer the amount of retained earnings restricted to an account titled **Appropriated Retained Earnings**.
- The retained earnings section may therefore report two separate amounts—(1) retained earnings free (unrestricted) and (2) retained earnings appropriated (restricted).
- The total of these two amounts equals the total retained earnings.

Statement of Stockholders' Equity

In addition to a balance sheet, statement of cash flows, and a comprehensive income statement, companies also report a **statement of stockholders' equity** (often referred to as statement of changes in shareholders' equity). This statement reports the changes in each stockholders' equity account and in total stockholders' equity during the year.

Companies often prepare this statement **in columnar form**. In this format, they use columns for each account and for total stockholders' equity. Stockholders' equity is generally comprised of contributed capital (common and preferred stock and additional paid-in capital), retained earnings, and the accumulated balances in other comprehensive income.

Example 3.5 Statement of Stockholders' Equity

FACTS Offbrand Inc. has the following stockholders' equity account balances at the beginning of 2025: Common Stock $300,000, Retained Earnings $50,000, and Accumulated Other Comprehensive Income $60,000. No changes in the Common Stock account occurred during the year. Net income for the year is $110,000; other comprehensive income (due to an unrealized holding gain) during the year is $40,000 net of tax.

QUESTION How would you report this information in a statement of stockholders' equity?

SOLUTION

Offbrand's statement of stockholders' equity is as follows.

Offbrand Inc.
Statement of Stockholders' Equity
For the Year Ended December 31, 2025

	Total	Retained Earnings	Accumulated Other Comprehensive Income	Common Stock
Beginning balance	$410,000	$ 50,000	$ 60,000	$300,000
Net income	110,000	110,000		
Other comprehensive income				
Unrealized holding gain, net of tax	40,000		40,000	
Ending balance	$560,000	$160,000	$100,000	$300,000

Balance Sheet Presentation

The ending balance totals from the statement of stockholders' equity are reported on the balance sheet. The stockholders' equity section of Offbrand's balance sheet is shown in **Illustration 3.11**. Notice how the ending balances from Offbrand's statement of stockholders' equity in Example 3.5 appear on the balance sheet in Illustration 3.11.

ILLUSTRATION 3.11 Presentation of Stockholders' Equity in the Balance Sheet

Offbrand Inc.
Balance Sheet (partial)
As of December 31, 2025

Stockholders' equity	
Common stock	$300,000
Retained earnings	160,000
Accumulated other comprehensive income	100,000
Total stockholders' equity	$560,000

By providing information on accumulated other comprehensive income, the company communicates information about all changes in net assets. With this information, users will better understand the company's performance.

Put It into Practice LO 3.3
Report Stockholders' Equity

FACTS Quintin Inc. has retained earnings of $375,000 at January 1, 2025. During 2025:

- Quintin reported net income of $1,700,000.
- Cash dividends declared and paid totaled $85,000.
- An error was discovered: land costing $80,000 (net of tax) was charged to maintenance and repairs expense in 2024.

INSTRUCTIONS

Prepare a retained earnings statement for the year ended December 31, 2025.

SOLUTION

Quintin Corporation Retained Earnings Statement For the Year Ended December 31, 2025	
Retained earnings, January 1, as reported	$ 375,000
Correction for overstatement of expenses in prior period (net of tax)	80,000
Retained earnings, January 1, as adjusted	455,000
Add: Net income	1,700,000
	2,155,000
Less: Cash dividends	85,000
Retained earnings, December 31	$2,070,000

3.4 Revenue Recognition—The Fundamentals

LEARNING OBJECTIVE 4

Explain the revenue recognition principle.

As noted earlier, as the top line in the income statement, revenue is especially important in evaluating the profitability of a company. Furthermore, revenue numbers are attracting more attention from investors. In a recent survey, financial executives noted that the revenue recognition process is increasingly more complex to manage, more prone to error, and more material to financial statements compared to any other area in financial reporting. The report went on to note that revenue recognition is a top fraud risk and that regardless of the accounting rules followed, the risk of errors and inaccuracies in revenue recognition reporting is significant.[7]

The FASB has developed comprehensive guidance on revenue recognition. [6] This guidance applies to all companies and it provides a five-step process for determining when revenue should be recognized and how it should be measured. By following these provisions, companies should report revenue and income with enhanced comparability and consistency.

[7]Joseph Radigan, "Financial Fraud Risks to Watch for Amid the Pandemic," *Journal of Accountancy* (December 23, 2020).

Revenue Recognition Principle

The objective of the **revenue recognition** standard is to recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration that the company receives, or expects to receive, in exchange for those goods or services. For example, if **Amazon** sells you a new fitness tracker, Amazon receives cash (the consideration) and transfers the fitness tracker (the product) to you. In other words, Amazon recognizes revenue when its performance obligation (the transfer of the fitness tracker to you) is satisfied.

When is Amazon's performance obligation satisfied? It is satisfied when you (the customer) have control of the fitness tracker. Change in control is the deciding factor in determining when a performance obligation is satisfied. Customers control the product or service when they can directly use or obtain substantially all the remaining benefits from the asset or service. Control also includes the customers' ability to prevent others from directing the use of, or receiving the benefits from, the asset or service.

In the fitness tracker transaction, deciding when the change in control occurs is not complicated. However, in other situations, control is difficult to determine. Therefore, the FASB provides following indicators of when control has passed.

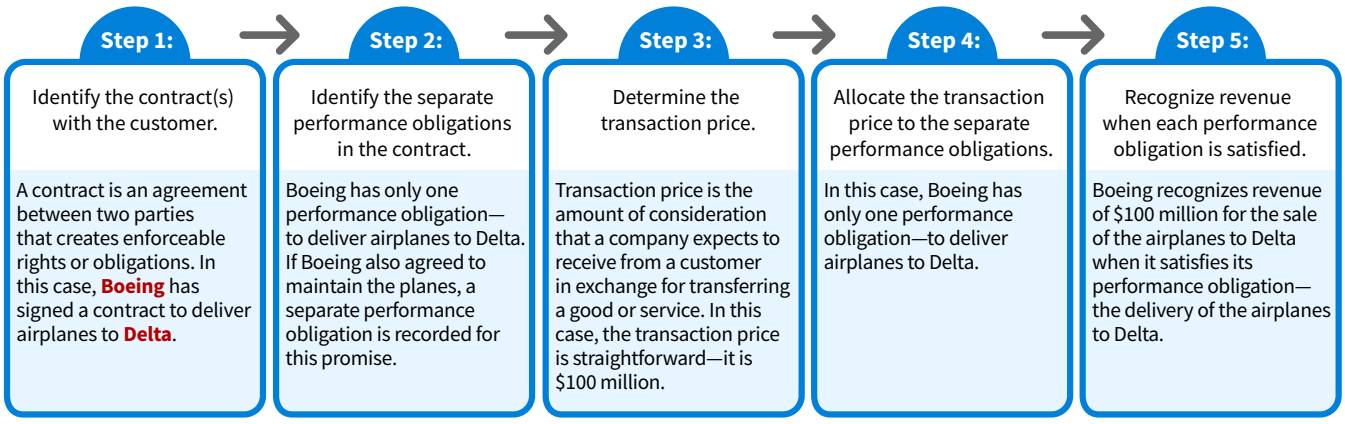
- The company has a right to payment for the asset.
- The company has transferred legal title to the asset.
- The company has transferred physical possession of the asset.
- The customer has significant risk and rewards of ownership.
- The customer accepted the asset.

This is a list of indicators, not requirements. Companies must use judgment to determine whether the factors collectively indicate that the customer has obtained control. The FASB has developed a five-step model for recording and measuring the amount of revenue to be recognized.

Overview of the Five-Step Model

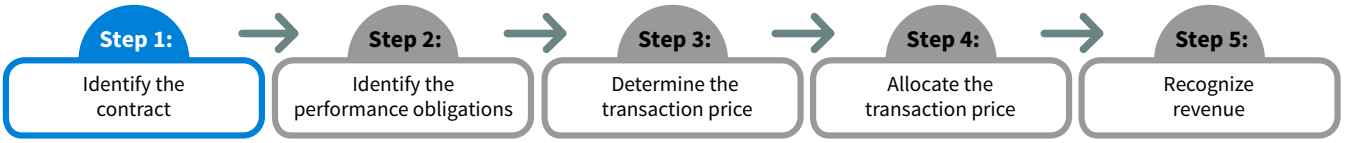
Recall our discussion of revenue recognition in Chapter 1, in which **Boeing Corporation** signs a contract to sell airplanes to **Delta Air Lines** for $100 million. **Illustration 3.12** shows here again the five steps that Boeing follows to recognize revenue.

ILLUSTRATION 3.12 Five Steps of Revenue Recognition


Step 1:
Identify the contract(s) with the customer.
A contract is an agreement between two parties that creates enforceable rights or obligations. In this case, Boeing has signed a contract to deliver airplanes to Delta.
Step 2:
Identify the separate performance obligations in the contract.
Boeing has only one performance obligation—to deliver airplanes to Delta. If Boeing also agreed to maintain the planes, a separate performance obligation is recorded for this promise.
Step 3:
Determine the transaction price.
Transaction price is the amount of consideration that a company expects to receive from a customer in exchange for transferring a good or service. In this case, the transaction price is straightforward—it is $100 million.
Step 4:
Allocate the transaction price to the separate performance obligations.
In this case, Boeing has only one performance obligation—to deliver airplanes to Delta.
Step 5:
Recognize revenue when each performance obligation is satisfied.
Boeing recognizes revenue of $100 million for the sale of the airplanes to Delta when it satisfies its performance obligation—the delivery of the airplanes to Delta.

Revenue recognition related to the sale of the airplanes occurs at Step 5, when Boeing delivers the airplanes to Delta and satisfies its performance obligation. In essence, a change in control from Boeing to Delta occurs. Let's take a closer look at each step of the revenue recognition model.

Step 1: Identify the Contract



A contract is an agreement between two or more parties that creates enforceable rights or obligations. Contracts can be written, oral, or implied from customary business practices. For example:

- If **Best Buy** sells you a laser printer off the shelf in one of its stores, you likely have **an implied contract** with Best Buy.
- If **Snowflake, Inc.** sells you a cloud-based data platform, you will have **a written contract** for capacity utilization, which typically has a term of one to four years.

Illustration 3.13 explains the type of contract(s) that **FedEx** and **Ford Motors** have with their customers.

ILLUSTRATION 3.13 Examples of Company Contracts

Company	Description of Contracts, as Reported in the Annual Report
FedEx	For most of our contracts with customers, the customer contracts with us to provide distinct services within a single contract, primarily transportation services.
Ford Motor	Revenue is recognized when obligations under the terms of a contract with our customer are satisfied. Generally, this occurs with the transfer of control of our vehicles, parts, accessories, or services.

Revenue is recognized only when a valid contract exists. In both the Best Buy and Snowflake situations, the sellers have rights to receive consideration from you, and you have the right to receive goods or services from them. The important point is that a formal written document is not needed for a valid contract to exist. Even if you have a written contract, it is not considered valid if either party can cancel the contract at any time or if neither party has performed on the contract. Specifically, for a contract to be valid, it must meet the following criteria.

1. Approval and commitment of parties.
2. Identification of rights and payment terms and commercial substance (the contract represents a valid transaction).
3. Collection is probable.

In summary, revenue recognition begins with existence of a valid contract, whether written or implied.

Example 3.6
Validity of Contract

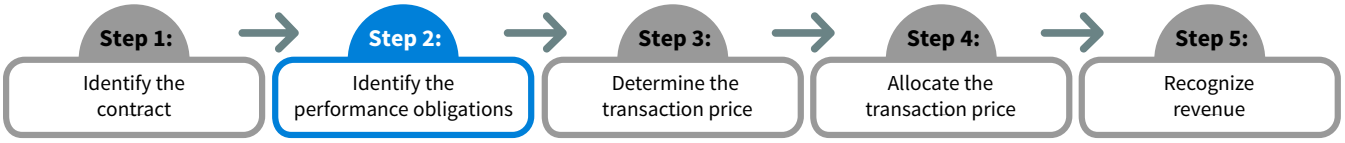
FACTS FlexCo sells equipment to a customer for total consideration of $1 million to be paid in annual payments at the end of the next three years. While FlexCo hopes to generate a lot of business with this customer in the future, there is some uncertainty about whether the customer will be able to pay as amounts become due. FlexCo delivers the equipment at the inception of the contract. At the end of the first year of the contract, the customer indicates it will not be able to make the first payment. FlexCo then determines that collection of the remaining amounts is not probable.

QUESTION Can FlexCo recognize revenue on this contract?

SOLUTION

FlexCo cannot recognize revenue for sale of this equipment. Even though other valid contract criteria are met, collection is not probable. Therefore, FlexCo cannot recognize revenue until payment is probable. Only then (or when payment is received) can FlexCo recognize revenue on this contract.

Step 2: Identify Performance Obligations



To recognize revenue, companies must identify the nature of their performance obligation(s). For example, a company like **Walmart** identifies four different performance obligations common in its business.

- Selling of merchandise and services to customers.
- Membership fee revenue.
- Gift card revenue.
- Financial and other services.

For Walmart, the performance obligations are readily identified. But for other companies' revenue arrangements, that is not always the case. For example, **Verizon** notes that its contracts with customers often include promises to transfer multiple products (cell phones) and services (cellular connections) to a customer. **Illustration 3.14** shows how **Microsoft** and **Activision Blizzard** (developer of interactive entertainment content and services) describe their performance obligations.

ILLUSTRATION 3.14 Company Performance Obligation

Company	Nature of Performance Obligations, as Reported in the Annual Report (in part)
Microsoft	. . .our contracts often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. When a cloud- based service includes both on premises software licenses and cloud services, judgment is required to determine the software licenses considered distinct and accounted for separately, or not distinct and accounted for together.
Activision Blizzard	. . .has multiple performance obligations. One performance obligation relates to the sale of its games including digital full length game downloads. It also recognizes revenue for software products that include a significant online functionality such its "Call of Duty" franchise.

Determining whether products or services are considered **distinct performance obligations** that should be accounted for separately versus together may require significant judgment. The FASB's guidance is that goods or services are distinct and accounted for as separate performance obligations if **both** of the following criteria exist.

1. The customer can benefit from the good or the service on its own.
2. The good or service is separately identifiable from other promises in the contract.

Let's return to the Amazon fitness tracker situation.

Example 3.7 Performance Obligation(s)

FACTS Assume that **Amazon** sells a fitness tracker for $36 and included in this price is a warranty, which covers any repair costs to the fitness tracker for one year after purchase.

QUESTION Does Amazon have one or two performance obligations related to the sale of the fitness tracker?

SOLUTION

Amazon has only one performance obligation. This is because the warranty promise (referred to as an assurance warranty) cannot be separately identified from the sale of the fitness tracker. While both the fitness tracker and the warranty are capable of being distinct (the customer could benefit from each item on its own), the warranty promise cannot be separately identified from fitness tracker within the contract.

Let's look at a different type of warranty for the fitness tracker.

Example 3.8 Separate Performance Obligation

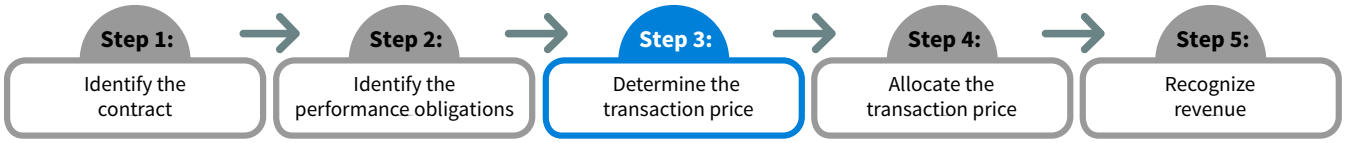
FACTS Refer to the facts in Example 3.7. Assume now that your contract with **Amazon** also includes purchase of an extended warranty on the fitness tracker, which covers repairs on the tracker for 2 more years at a price of $6 per year.

QUESTION Should Amazon account for the extended warranty as a separate performance obligation?

SOLUTION

In this situation, for accounting purposes, Amazon has two performance obligations. One relates to the sale of the fitness tracker with the assurance warranty (as analyzed in Example 3.7) and a second performance obligation that relates to the extended warranty (known as a service-type warranty). The extended warranty is a separate performance obligation because it is separately identifiable from the other promises in the contract. For example, the extended warranty is separately identifiable and priced independently from the sale of the tracker with the one-year warranty.

Step 3: Determine Transaction Price



The transaction price is the amount of consideration that a company expects to receive from a customer in exchange for transferring goods or services. In many cases, the transaction price is fixed; therefore, determining the transaction price is straightforward. For example, when Amazon sold the fitness tracker in Example 3.7, the price was fixed at $36.

In other situations, several factors may have to be considered in determining the transaction price. These factors include possible variable consideration, noncash consideration, significant financing costs, or amounts payable to customers (e.g., discounts or returns and allowances). **Illustration 3.15** shows how **Nike** and **Amazon** describe measurement of transaction price.

ILLUSTRATION 3.15 Measurement of Transaction Price

Company	Transaction Price Discussion, as Reported in the Annual Report (in part)
Nike	Consideration promised in the Company's contracts with customers is variable due to anticipated reductions such as sales returns, discounts and miscellaneous claims from customers. The Company estimates the most likely amount it will be entitled to receive and records an anticipated reduction against revenues, with an offsetting increase to Accrued liabilities at the time revenues are recognized.
Amazon	Revenue is measured based on the amount of consideration that we expect to receive, reduced by estimates for return allowances, promotional discounts, and rebates. Revenue also excludes any amounts collected on behalf of third parties, including sales and indirect taxes. In arrangements where we have multiple performance obligations, the transaction price is allocated to each performance obligation using the relative stand-alone selling price. We generally determine stand-alone selling prices based on the prices charged to customers or using expected cost plus a margin.

Variable consideration describes a situation in which the price of a good or service is dependent on future events. These future events might include price increases, volume discounts, rebates, credits, performance bonuses, or royalties. In these cases, the company

estimates the amount of variable consideration it will receive from the contract to determine the amount of revenue to recognize. Companies commonly use the **expected value,** which is a **probability-weighted amount**. Alternatively, they may use the **most likely amount** in a range of possible amounts to estimate variable consideration.

Example 3.9
Variable Consideration

FACTS Peabody Inc. enters into a contract with Doolittle Co. to build a warehouse for $100,000 with a performance bonus of $50,000 that will be paid based on the timing of completion. The amount of the performance bonus decreases by 10% per week for every week beyond the agreed-on completion date. These requirements are similar to contracts Peabody has performed previously, and management believes that such experience is predictive for this contract. Peabody concludes that the expected value method is most predictive in this case. Peabody estimates that there is:

- 60% probability that the contract will be completed by the agreed upon completion date.
- 30% probability that it will be completed one week late.
- 10% probability that it will be completed two weeks late.

QUESTION How should Peabody determine the transaction price?

SOLUTION

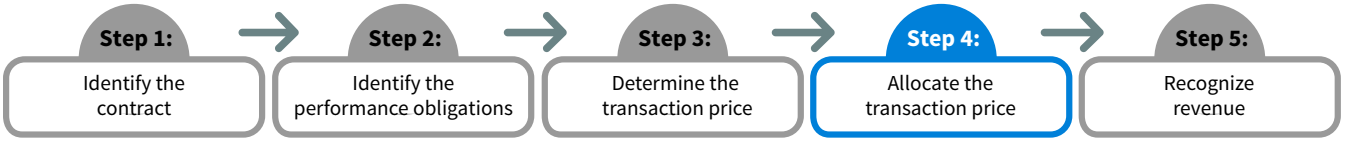
The transaction price should include management's estimate of the amount of consideration to which the reporting entity will be entitled for the work performed. The probably-weighted consideration is calculated as follows.

$150,000 (fixed fee plus full performance bonus) × .60	$ 90,000
$145,000 (fixed fee plus 90% of performance bonus) × .30	43,500
$140,000 (fixed fee plus 80% of performance bonus) × .10	14,000
Total probability-weighted consideration	$147,500

The total transaction price is $147,500 based on the probability-weighted estimate. Peabody will update its estimate at each reporting date.

A word of caution—a company **only includes variable consideration if it is reasonably assured that it will be entitled to that amount**. Companies may only recognize variable consideration if (1) they have experience with similar contracts and are able to estimate the cumulative amount of revenue, and (2) based on experience, it is highly probable that there will not be a significant reversal of revenue previously recognized. If these criteria are not met, the amount of revenue recognized may be limited. Issues related to accounting for other variable consideration such as sales returns, sales discounts, and present value computations related to long-term contracts are discussed in later chapters.

Step 4: Allocate Transaction Price



A company generally allocates the transaction price to its separate performance obligations in proportion to stand-alone selling prices. The standalone selling price is the price at which a company would sell a promised product or service separately to a customer. If this information is not available, companies should use their best estimate of what those goods or services might sell for as a standalone item. Illustration 3.16 shows how **Alphabet (Google)** and **Amazon** allocate transaction prices to multiple performance obligations.

ILLUSTRATION 3.16 Allocation Approach

Company	Allocation Approach, as Reported in the Annual Report (in part)
Alphabet (Google)	. . .we allocate revenues to each performance obligation based on its relative standalone selling price. We generally determine standalone selling price, based on the prices charged to customers or using expected cost plus margin.
Amazon	. . .the transaction price is allocated to each performance obligation using the relative standalone selling price. We generally determine standalone selling price based on the prices charged to customers, using expected cost plus a margin.

Example 3.10 Allocate Transaction Price

FACTS Skipper Marine sells boats and provides docking slips for its customers. Skipper sells the boats for $30,000 each and provides mooring facilities for $5,000 per year. To promote sales, Skipper enters into a contract to sell a boat combined with one year of mooring services to a customer for $32,500. Skipper concludes that the goods and services should be accounted for as separate performance obligations.

QUESTION How should Skipper allocate the transaction price of $32,500 to the performance obligations?

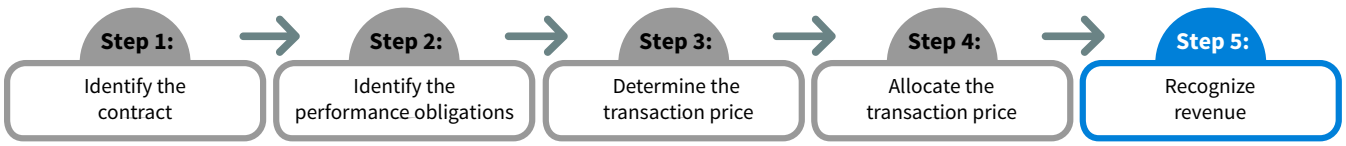
SOLUTION

The transaction price of $32,500 is allocated to the boat sale and the mooring services based on their relative standalone selling prices as follows.

Boat [$32,500 × ($30,000 ÷ $35,000)]	$27,857
Mooring services [$32,500 × ($5,000 ÷ $35,000)]	4,643

If sold on a standalone basis, the customer would have paid $35,000 ($30,000 + $5,000). The bundling of the boat and mooring services provide the customer a $2,500 discount. The allocation results in the $2,500 discount being allocated proportionately to the two performance obligations.

Step 5: Recognize Revenue



As indicated earlier, revenue is recognized when performance obligations are satisfied by transferring control of a good or service to a customer. Control either transfers over time or at a point in time which affects when revenue is recognized. Illustration 3.17 shows how **Nike** and **General Mills** explain revenue recognition.

ILLUSTRATION 3.17 Recognition of Revenue

Company	Recognition of Revenue, as Reported in the Annual Report (in part)
Nike	The Company satisfies the performance obligation and records revenues when transfer of control has passed to the customer, based on the terms of sale. A customer is considered to have control once they are able to direct the use and receive substantially all of the benefits of the product.
General Mills	We recognize revenue for the sale of packaged foods at the point in time when our performance obligation has been satisfied and control of the product has transferred to our customer, which generally occurs when the shipment is accepted by our customer.

Example 3.11
Recognize Revenue

FACTS Assume that on January 1, 2025, **Amazon** sold 100 fitness trackers at $36, for total proceeds of $3,600. In addition, it sold an extended 2-year warranty on 40 of these fitness trackers for $12 or $6 per year. Recall that the extended warranty takes effect after the regular one-year assurance warranty expires.

QUESTION How should Amazon report this information in 2025, 2026, and 2027?

SOLUTION

Amazon satisfies the performance obligation related to the sale of the fitness tracker at a point in time (along with any cost of goods sold). Therefore, Amazon recognizes $3,600 as revenue in 2025. In addition, Amazon recognizes revenue over time for the revenue related to the extended warranty services. Therefore, warranty revenue of $240 (40 × $6) is recognized in 2026, and the remaining warranty revenue of $240 is recognized in 2027.

A company recognizes revenue from a performance obligation over time by measuring the progress toward completion. The method selected for measuring progress should depict the transfer of control from the company to the customer. For many service arrangements, such as with the extended warranty for the fitness tracker example, revenue is recognized on a straight-line basis because the performance obligation is being satisfied ratably over the term of the contract. In other settings, such as long-term construction contracts, companies use various methods to determine the state of progress toward completion (e.g., costs incurred, labor hours worked, tons produced, and floors completed). Use of these progress-to-completion methods requires the exercise of judgment and careful tailoring to the circumstances.

Summary

The discussion in this section provides the foundation for understanding revenue recognition. Chapters 6, 7, and 13 explore in more detail the application of revenue recognition as it relates to certain assets and liabilities. Chapter 17 provides a comprehensive discussion of the revenue recognition model and its application.

Put It into Practice LO 3.4
Recognize Revenue

FACTS Backup Company manufactures emergency power equipment. Its most popular generator is a model called the Back-Gen, which has a retail price of $1,500 and costs Backup $740 to manufacture. It sells the Back-Gen under a written contract, which indicates the customer's and Backup's rights and responsibilities on the sale of each Back-Gen (collection on the contract is probable). Backup sells its generators on a standalone basis directly to customers, as well as provides installation services. Installation services are not specialized and customers could hire other vendors to provide these services.

Backup sells 30 generators (with installation) to a chain of convenience stores to provide uninterrupted power to its self-service beverage coolers for a total contract price of $50,000. Backup provides installation services at a standalone selling price of $200 per Back-Gen; the cost to Backup to install is $150 per Back-Gen. The generators are delivered on February 1, 2025, installation is completed on March 15, 2025, and full payment is made to Backup Company.

INSTRUCTIONS

a. Evaluate each of the five steps in the revenue recognition model for this revenue arrangement. The sale of the generator and the installation are accounted for as separate performance obligations.

b. What amount of income related to this arrangement will be included in Backup's 2025 income?

c. Assume now that the customer promises to pay Backup 3 months after installation. Briefly discuss how collectibility of this payment affects revenue recognition and income measurement for Backup.

SOLUTION

a. With respect to the five-step model:

1. **Identify the contract.** Backup and the customer enter into a written contract, which entails (1) approval and commitment of parties and (2) identification of rights and payment terms. Collection is probable.
2. **Identify performance obligations.** There are two performance obligations: (1) delivery of the Back-Gens and (2) installation of the Back-Gens. These promises are distinct and, given installation could be done by another vendor and installation has a stand-alone selling price, you should conclude that installation is separately identifiable from sale of the generator and should be accounted for as a separate performance obligation.
3. **Determine the transaction price.** The total transaction price is $50,000, as specified in the contract. It is the amount that Backup expects to receive in exchange for the goods and services.
4. **Allocate the transaction price.** The total price should be allocated between the equipment and installation, based on relative standalone selling prices:

Equipment [($45,000 ÷ $51,000*) × $50,000]	$44,118
Installation [($6,000 ÷ $51,000) × $50,000]	5,882

*30 Back-Gens × $1,500	$45,000
30 installations × $200	6,000
Total standalone price	$51,000

5. **Recognize revenue.** Control of the generator transfers upon delivery on February 1, 2025; Sales Revenue (and Cost of Goods Sold) is recognized on this date. The installation revenue is recognized on March 15, 2025, when installation is completed (Backup satisfies its installation performance obligation).

b. Income to be included on this arrangement is as follows.

Sales revenue		$44,118
Cost of goods sold (30 × $740)		22,200
Gross profit		$21,918
Installation revenue	$5,882	
Installation expense (30 × $150)	4,500	
Net profit		1,382
Total income on this arrangement		$23,300

Assuming both delivery and installation occur in the same accounting period, the income effect on the entire arrangement would appear in a single period's income.

c. If it is not probable that a company will get paid for satisfying a performance obligation, the existence of a valid contract is questionable. If collection is not probable, Backup cannot recognize revenue until payment is probable. Only then (or when all amounts are paid) can Backup recognize revenue on this contract.

3.5 Quality of Earnings

LEARNING OBJECTIVE 5

Describe the concept of earnings quality.

So far, our discussion has highlighted the importance of information in the income statement for investment and credit decisions, including evaluation of the company and its managers.

- Companies try to meet or beat Wall Street expectations so that the market price of their stock, as well as the value of management's stock compensation packages, increase.
- Companies have incentives to "manage" income to meet earnings targets or to make earnings look less risky.
- In some cases, management has gone too far, which has led to the reporting of fraudulent financial information.

The SEC has therefore expressed concern that the motivations to meet earnings targets may override good business practice. This erodes the quality of earnings and the quality of financial reporting. As indicated by one SEC chairperson, "Managing may be giving way to manipulation, integrity may be losing to illusion."

Earnings Management

What is earnings management?

- **Earnings management** is often defined as the planned timing of revenues, expenses, gains, and losses to smooth out the bumps in earnings.
- In most cases, companies use earnings management to increase income in the current year at the expense of income in future years. As one commentator noted, "it is like popping a cork in [opening] a bottle of wine before it is ready."

As an example, the SEC recently charged rental-car company **Hertz** with inaccurate financial reporting for, among other things, artificially lowering its estimated bad debt expense to meet earnings targets. Hertz reworked its methodology for estimating the allowance for doubtful accounts to arrive at a 4% reserve rate. This implied a 96% recovery rate, which did not align with historical recovery rates. In addition to individual charges against the former CEO and corporate controller for their roles in perpetuating the fraud, Hertz paid $16 million to settle the SEC charges.

Companies also use earnings management to decrease current earnings to increase income in the future. The classic case is the use of "cookie jar" reserves. Companies establish these reserves by using unrealistic assumptions to estimate liabilities for items such as loan losses, restructuring charges, and warranty returns. The companies then reduce these reserves in the future to increase reported income in the future. Such earnings management negatively affects the quality of earnings. It distorts information in a way that is less useful for predicting future earnings and cash flows.

In other situations, companies misrepresent operating performance based on classification of various income items. For example, **Conagra Foods** reported a non-recurring gain of $186 million from the sale of **Pilgrim's Pride** stock as an operating item to help meet an earnings target. In a second case, when **eBay** sold the remainder of its investment in **Skype** to **Microsoft**, it reported a gain in Other revenues and gains of $1.7 billion. Since eBay's total income from operations was $2.4 billion, it was very important that the gain from the Skype sale not be buried in operating income.

Non-GAAP Reporting

Some companies go to great lengths to present their results in the most favorable light, by implementing "non-GAAP" reporting. As an example, the management discussion and analysis section of its 2019 annual report by **Groupon** presents the additional information shown in **Illustration 3.18**.

ILLUSTRATION 3.18 Non-GAAP Reporting

Groupon

	Year Ended December 31	
	2019	**2018**
Income (loss) from continuing operations	$ (14,292)	$ 1,988
Adjustments:		
Stock-based compensation	81,615	64,821
Depreciation and amortization	105,765	115,828
Acquisition-related expense (benefit), net	39	655
Restructuring charges	31	(136)
IBM patent litigation	—	34,600
Gain on sale of intangible assets	—	—
Other (income) expense, net	53,329	53,008
Provision (benefit) for income taxes	761	(957)
Total adjustments	241,540	267,819
Adjusted EBITDA	$227,248	$269,807

In Illustration 3.18, Groupon management indicates that adjusted EBITDA (earnings before interest, taxes, depreciation, and amortization) is a non-GAAP financial measure that comprises net loss excluding income taxes, interest and other nonoperating items, depreciation and amortization, stock-based compensation, and acquisition-related expense (benefit), net. Management also indicates that the definition of adjusted EBITDA may differ from similar measures used by other companies, even when similar terms are used to identify such measures:

> "Adjusted EBITDA is a key measure used by our management and Board of Directors to evaluate operating performance, generate future operating plans and make strategic decisions for the allocation of capital. Accordingly, we believe that adjusted EBITDA provides useful information to investors and others in understanding and evaluating our operating results in the same manner as our management and Board of Directors."

Why do companies report these adjusted income numbers, sometimes referred to as non-GAAP measures? One major reason is that companies believe some items on the income statement are not representative of operating results.

- Non-GAAP advocates defend non-GAAP reporting, saying it gives better insight into the fundamental operations of the business.
- However, skeptics of non-GAAP reporting often note that these adjustments generally lead to higher adjusted net income and, as a result, often report **earnings before bad stuff (EBS)**.

In Groupon's case, the add-backs took a GAAP net loss of $14,292 thousand and adjusted it to a non-GAAP profit of $227,248 thousand in 2019. Groupon is not alone, as many companies (over 80% of those in the S&P 500) employ non-GAAP reporting. Importantly, a large percentage of these companies reported **higher** non-GAAP numbers compared to GAAP.

Another concern with non-GAAP reporting is that it is difficult to compare these adjusted numbers because companies have different views as to what is fundamental to their business. Such variation in reporting reduces the quality of the reporting because users are unsure of which numbers to rely on. In many ways, the non-GAAP reporting practices by companies like Groupon represent implied criticisms of certain financial reporting standards, including how the information is presented on the income statement.

These non-GAAP disclosures are not exempt from scrutiny by the SEC. **BGC Partners** recently paid a $1.4 million civil penalty to the SEC related to its non-GAAP financial measure called "post-tax distributable earnings." The SEC found this measure to be improperly calculated and misleading to users.

Fraudulent Financial Reporting

A fine line exists between earnings management and the preparation of fraudulent financial statements. In many cases, the rationales used for earnings management are the same that are used to commit fraud. Major rationales for earnings management and fraudulent financial statements are to influence stock price, hit earnings benchmarks, influence executive compensation, or protect individual careers.

Fraudulent financial reporting is defined as the "intentional or reckless conduct whether an act or omission, that results in materially misleading financial statements." Fraudulent financial reporting involves gross and deliberate distortion of corporate records (such as fictitious sales invoices) or misapplication of accounting principles (failure to disclose material transactions). Here are some recent examples of fraudulent financial reporting frauds that have occurred.

- The headline in the financial press was "Fake accounting sees U.S. marijuana company go to pot." A fine of over $12 million was assessed against **Medbox**, which sold vending machines to dispense marijuana, for falsely touting recent revenue numbers to investors while some of its earnings came from sham transactions with a secret affiliate.
- Executives at **Lukin Coffee** (a company often referred to as the next **Starbucks**) admitted recently that it had fabricated as much as $310 million of sales, or approximately one-third of its revenue.
- **Abeko Brake** inflated its sales and profit by channel stuffing its distributors with too much inventory, thereby recognizing revenue early.
- **Steinhoff International Holdings** (often referred to as Africa's **IKEA**) found that executives inflated profits and asset values over an extended period.
- **Wirecard** revealed that it was unable to trace about $2 billion in cash balances—in essence, it had $2 billion in fake cash.
- Shares in **Globalscape Inc.** plunged by as much as 23% after the company said an internal forensic audit found improper arrangements with customers in the fourth quarter that overstated its earnings and revenue.

Fraudulent financial reporting usually occurs because of conditions in a company' environment. Here are some examples.

- Influences in the environment related to poor internal control systems.
- Management's poor attitude toward ethics.
- Significant liquidity or profitability problems.
- Overall business environment (e.g., the Covid pandemic).

Opportunities for fraudulent reporting also increases dramatically when the accounting principles followed in reporting transactions are nonexistent, evolving, or subject to varying interpretations. Indeed, as discussed in the prior section, increasing fraud risk related to revenue was a key motivation for the FASB in developing the conceptually sound five-step revenue recognition model.

Response by the Profession

Circus founder P.T. Barnum is alleged to have said, "Trust everyone, but cut the deck." Congress, the SEC, and others are now attempting to cut the deck in many ways.

- Congress passed the Sarbanes-Oxley Act (SOX) to reduce unethical corporate behavior and decrease the likelihood of future corporate reporting failures. As a result of SOX, top management must now certify the accuracy of financial information. In addition, penalties for fraudulent financial reporting are much more severe.
- The SEC issued Regulation G, which requires companies to reconcile non-GAAP financial measures to GAAP. This regulation provides investors with a roadmap to analyze adjustments that companies make to their GAAP number to arrive at a non-GAAP result. Regulation G helps investors compare one company's non-GAAP measures with results reported by another company.

The continuing evolution of Big Data and data analytics will also play a part in curbing fraudulent financial reporting. The SEC is using a risk-based analytic approach to identify potential violations. For example, the SEC uses data analytics to uncover earnings management practices by evaluating their impact on earnings per share data.

As indicated in Chapter 1, the standards of conduct by which actions are judged as right or wrong, honest or dishonest, or fair or unfair, are ethics. Effective financial reporting depends on sound ethical behavior. The bond and trust between shareholders and the company must remain strong. Investors or others losing faith in the numbers reported in the financial statements will damage U.S. capital markets.

Accounting Matters — Good Accounting Does Matter

"**General Motors** surged over 5% before the market opened after reporting third-quarter profit that leapfrogged Wall Street's expectations." "**Zynga** dropped over 6% off hours. The game maker's third-quarter revenue and forecast was boosted by two acquisitions, but it still reported a loss." It is no surprise that the market reacts when a company meets, or misses, forecasted earnings. Studies have shown that companies are far more likely to **just meet or beat** earnings per share forecasts, and are rewarded for doing so with positive stock returns.

The precision with which companies can meet or exceed earnings targets certainly calls into question the tactics used to achieve that goal. With share price on the line, managers may engage in earnings management to avoid reporting earnings lower than analyst forecasts. Is it unethical to change methodologies for calculating allowance for doubtful accounts? Not if the change is based on sound evidence. If, however, the change is made simply to achieve a pre-established earnings target, the quality of financial reporting suffers.

Sources: David Burgstahler and Michael Eames, "Management of Earnings and Analysts' Forecasts to Achieve Zero and Small Positive Earnings Surprises," *Journal of Business, Finance & Accounting* (July 2006); and Jem Bartholomew, "Qualcomm, Apple, GM, PayPal, Zynga: What to Watch When the Stock Market Opens Today," *Wall Street Journal* (November 5, 2020).

APPENDIX **3A**

Accounting Changes and Errors

LEARNING OBJECTIVE *6

Explain the reporting of accounting changes, estimates, and errors.

Changes in accounting principle, change in estimates, and corrections of errors require unique reporting provisions. In Chapter 21, we examine these topics in greater detail, so consider this appendix an introduction.

Underlying Concepts

Companies can change principles, but they must demonstrate that the newly adopted principle is preferable to the old one. Such changes result in lost consistency from period to period. Changes in accounting principles also occur when the FASB introduces new accounting standards, such as the changes in revenue recognition and accounting for leases.

Changes in Accounting Principles

Changes in accounting occur frequently in practice because important events or conditions may be in dispute or uncertain at the statement date. One type of accounting change results when a company adopts a different accounting principle (see **Underlying Concepts**). **Changes in accounting principle** include a change in the method of inventory pricing from FIFO to average-cost, or a change in accounting for construction contracts from the percentage-of-completion to the completed-contract method. [7]

- A company recognizes a change in accounting principle by making a **retrospective adjustment** to the financial statements.
- Such an adjustment recasts the prior years' statements on a basis consistent with the newly adopted principle.
- The company records the cumulative effect of the change for prior periods as an adjustment to beginning retained earnings of the earliest year presented.

Example 3.12
Change in Inventory Method

FACTS Gaubert Inc. decided in March 2025 to change from FIFO to weighted-average inventory pricing. Gaubert's income before income tax, using the new weighted-average method in 2025, is $30,000. Pretax income data for 2023 and 2024 is as follows.

Year	FIFO	Weighted-Average Method	Excess of FIFO over Weighted-Average Method
2023	$40,000	$35,000	$5,000
2024	30,000	27,000	3,000
Total			$8,000

QUESTION Assuming a tax rate of 30%, what net income should be reported by Gaubert in 2023, 2024, and 2025?

SOLUTION

Gaubert presents its comparative income statements for 2023, 2024, and 2025 as follows.

	2025	2024	2023
Income before income tax	$30,000	$27,000	$35,000
Income tax (30%)	9,000	8,100	10,500
Net income	$21,000	$18,900	$24,500

Thus, under the retrospective approach as shown in Example 3.12, the company recasts the prior years' income numbers under the newly adopted method. This approach therefore preserves comparability across years.

Changes in Accounting Estimates

Changes in accounting estimates are inherent in the accounting process. For example, companies estimate useful lives and salvage values of depreciable assets, uncollectible receivables, inventory obsolescence, and the number of periods expected to benefit from a particular expenditure.

- Frequently, due to time, circumstances, or new information, even estimates originally made in good faith must be changed.
- A company accounts for such changes in estimates in the current period of change if they affect only that period, or in the current period of change and future periods if the change affects both.

Example 3.13
Change in Estimate for Bad Debts

FACTS DuPage Materials Corp. consistently estimated its bad debt expense at 1% of accounts receivable. In 2025, however, DuPage determines that it must revise upward the estimate of bad debts for accounts receivable outstanding to 2%, or double the prior years' percentage. The 2% rate is necessary to reduce accounts receivable to net realizable value. Using 2% results in a bad debt expense of $240,000, or double the amount using the 1% estimate for prior years.

QUESTION What entry would you advise DuPage to make to record bad debt expense in 2025?

SOLUTION

DuPage records the bad debt expense and related allowance at December 31, 2025 (assuming a zero balance in the allowance), as follows.

Bad Debt Expense	240,000	
Allowance for Doubtful Accounts		240,000

DuPage includes the entire change in estimate in 2025 income because the change does not affect future periods.

Companies do not handle changes in estimate retrospectively. That is, such changes are not carried back to adjust prior years. **Changes in estimate are not considered errors.**

Corrections of Errors

Errors occur as a result of mathematical mistakes, mistakes in the application of accounting principles, or oversight or misuse of facts that existed at the time financial statements were prepared. In recent years, many companies have corrected for errors in their financial statements. The errors involved such items as improper reporting of revenue, accounting for stock compensation, allowances for receivables, inventories, and other provisions. Here are two examples of errors in financial statements.

- **Mattel Inc.** understated its net losses by $109 million in a recent quarter because of an error calculating its tax valuation allowance, then understated the next quarter results by a smaller amount.
- **Metlife** disclosed that several retired workers were without their retirement benefits because of a recording mistake, which resulted in a significant restatement of reported income.

Companies correct errors by making proper entries in the accounts and reporting the corrections in the financial statements. Corrections of errors are treated as **prior period adjustments**.

- Companies record a correction of an error in the year in which it is discovered.
- They report the error in the financial statements as an adjustment to the beginning balance of retained earnings.
- If a company prepares comparative financial statements, it should restate the prior statements for the effects of the error.

Example 3.14
Error Correction

FACTS In 2026, Hillsboro Co. determined that it incorrectly overstated its accounts receivable and sales revenue by $100,000 in 2025.

QUESTION What entry should Hillsboro make to correct this error (ignore taxes)?

SOLUTION

In 2026, Hillsboro makes the following entry to correct for this error.

Retained Earnings	100,000	
Accounts Receivable		100,000

In Example 3.14, beginning retained earnings is debited in 2026 because sales revenue, and therefore net income, was overstated in 2025 (hence, Retained Earnings was overstated). Hillsboro would not want to debit the revenue account in 2026 as that would impact 2026 revenues when in fact the error occurred in 2025. Accounts Receivable is credited to reduce this overstated balance to the correct amount. It is reasonable to credit Accounts Receivable in 2026 for the 2025 error as Accounts Receivable is a permanent account whose balance carries over from period to period.

The impact of changes in accounting principle and error corrections are debited or credited directly to retained earnings for the amounts related to prior periods. **Illustration 3A.1** summarizes the basic concepts related to these items.

ILLUSTRATION 3A.1 Summary of Accounting Changes and Errors

Type of Situation	Criteria	Examples	Placement on Income Statement
Changes in accounting principle	Change from one generally accepted accounting principle to another.	Change in the basis of inventory pricing from FIFO to average-cost.	Recast prior years' income statement on the same basis as the newly adopted principle. (**Shown net of tax.**)
Changes in estimates	Normal, recurring corrections and adjustments.	Changes in the realizability of receivables and inventories; changes in estimated lives of equipment, intangible assets; changes in estimated liability for warranty costs, income taxes, and salary payments.	Show change only in the affected accounts in current and future periods. (**Not shown net of tax.**)
Corrections of errors	Mistake, misuse of facts.	Error in reporting income and expenses.	Treat as prior period adjustment; restate prior years' income statements to correct for error. (**Shown net of tax.**)

Put It into Practice LO 6

Report Accounting Changes and Errors

FACTS You are working in the external reporting department for Palmer Company. You have been assigned the task of evaluating the classification of various items to be reported in this year's financial statements. You are working through the following list.

1. The company changed its computation for bad debt expense from 2% to 3% of receivables due to the economic effects of Covid-19 on its customers.
2. Palmer's West Coast division forgot to record the adjusting journal entry for depreciation expense on its manufacturing facility 2 years ago. The division discovered this error in the current year.
3. During the current year, Palmer extended the estimated useful life of certain equipment from 7 to 10 years. As a result, depreciation for the current year was materially lowered.
4. The company changed from the average-cost method to the FIFO method for inventory costing purposes.

INSTRUCTIONS

Indicate the nature of each transaction and the recommended reporting in the financial statements. Provide a brief rationale for your position.

SOLUTION

	Nature of Item	Reporting / Rationale
1.	Change in estimate	Considered part of normal business activity. Treat effects in the current period using new estimate in current income. No separate disclosure unless material.
2.	Error	Debit Retained Earnings and credit Accumulated Depreciation to correct for that year's omitted depreciation. The prior-year income statements should be restated if the amount of the error is material.
3.	Change in estimate	Treat effects in the current period. Change depreciation expense in body of income statement, based on new useful life. Use new estimate to calculate current- and future-period net income. Material item, but change in estimated useful life is considered part of normal business activity.
4.	Change in accounting principle	A change in inventory methods is a change in accounting principle. Prior periods are recast as if new method was used (retrospective treatment).

Review and Practice

Key Terms Review

Appropriated Retained Earnings 3-19
capital maintenance approach 3-3(*n*)
*changes in accounting estimates 3-34
*changes in accounting principle 3-33
comprehensive income 3-16
discontinued operation 3-12
earnings management 3-30
earnings per share (EPS) 3-7
income statement 3-2
intraperiod tax allocation 3-14
multiple-step income statement 3-4
other comprehensive income 3-16
*prior period adjustments 3-35
revenue recognition 3-22
single-step income statement 3-8
statement of comprehensive income (comprehensive income statement) 3-2(*n*)
statement of stockholders' equity 3-20
transaction approach 3-3

Learning Objectives Review

1 Identify the uses, limitations, and basic content of an income statement.

The **income statement is useful** because it provides investors and creditors with information that helps them predict the amounts, timing, and uncertainty of future cash flows. Also, the income statement helps users determine the risk (level of uncertainty) of not achieving particular cash flows. The **limitations of an income statement** are as follows. (1) The statement does not include many items that contribute to general growth and well-being of a company. (2) Income numbers are often affected by the accounting methods used. (3) Income measures are subject to estimates.

The **major elements of the income statement** are as follows.

1. **Revenues.** Inflows or other enhancements of assets of an entity or settlements of its liabilities during a period from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.
2. **Expenses.** Outflows or other using-up of assets or incurrences of liabilities during a period from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations.
3. **Gains.** Increases in equity (net assets) from peripheral or incidental transactions of an entity except those that result from revenues or investments by owners.
4. **Losses.** Decreases in equity (net assets) from peripheral or incidental transactions of an entity except those that result from expenses or distributions to owners.

A **multiple-step income statement** shows two further classifications: (1) a separation of operating results from those obtained through the nonoperating activities of the company, and (2) a classification of expenses by functions, such as merchandising or manufacturing, selling, and administration.

In a **single-step income statement**, just two groupings exist: revenues and expenses. Expenses are deducted from revenues to arrive at net income or loss—a single subtraction. Frequently, companies report income tax separately as the last item before net income.

2 Discuss the accounting for unusual income items.

Companies generally include unusual or infrequent gains or losses or both or non-recurring items in the income statement as follows. (1) Other items of a material amount that are of an unusual or infrequent nature or both are separately disclosed as a component of continuing operations. (2) Discontinued operations are classified as a separate item, after income from continuing operations. (3) Companies report the components of **other comprehensive income** in one of two ways: (a) a single statement of comprehensive income (one statement format) or (b) in a second statement (two statement format).

Companies must disclose **earnings per share** on the face of the income statement. If the company has a discontinued item, it must also report income from continuing operations, discontinued operations, and net income on a per share basis.

3 Explain the reporting of stockholders' equity.

The **retained earnings statement** should disclose net income (loss), dividends, adjustments due to changes in accounting principles, error corrections, and restrictions of retained earnings.

Companies also present a **statement of stockholders' equity**. This statement reports the change in each stockholders' equity account (including Accumulated Other Comprehensive Income) and in total stockholders' equity for the period.

4 Explain the revenue recognition principle.

As the top line in the income statement, revenue is especially important in evaluating the profitability of a company. Most revenue transactions pose few problems for revenue recognition. Increasing complexity of business and revenue arrangements have resulted in revenue recognition practices being identified as the most prevalent reasons for accounting restatements. The FASB has developed comprehensive guidance on revenue recognition, which specifies the following five-step process for

determining when revenue should be recognized and how it should be measured: (1) identify the contract with customers, (2) identify the separate performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the separate performance obligations, and (5) recognize revenue when each performance obligation is satisfied. By following these provisions, companies should report revenue and income with enhanced comparability and consistency.

5 Describe the concept of earnings quality.

Earnings management is usually defined as the planned timing of revenues, expenses, gains, and losses to smooth out the bumps in earnings. Companies commonly use earnings management to increase income in the current year at the expense of income in future years. Such earnings management, as well as misclassification of revenue, expenses, gains and losses, including non-GAAP reporting, can reduce the usefulness of reported income to users of financial statements. Accounting regulators and the accounting profession have increased attention on these issues through regulation of non-GAAP reporting and increased penalties on fraudulent financial reporting.

*6 Explain the reporting of accounting changes, estimates, and errors.

Changes in accounting principles and corrections of errors are adjusted through retained earnings. Changes in estimates are a normal part of the accounting process. The effects of these changes are handled prospectively, with the effects recorded in income in the period of change and in future periods without adjustment to retained earnings.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. What kinds of questions about future cash flows do investors and creditors attempt to answer with information in the income statement?

2. How can information based on past transactions be used to predict future cash flows?

3. Identify at least two situations in which important changes in value are not reported in the income statement.

4. Identify at least two situations in which application of different accounting methods or accounting estimates results in difficulties in comparing companies.

5. Explain the transaction approach to measuring income. Why is the transaction approach to income measurement preferable to other ways of measuring income?

6. Why should caution be exercised in the use of the net income figure derived in an income statement? What are the objectives of generally accepted accounting principles in their application to the income statement?

7. What is the major distinction (a) between revenues and gains and (b) between expenses and losses?

8. What are the advantages and disadvantages of the single-step income statement?

9. What is the basis for distinguishing between operating and nonoperating items?

10. Discuss the appropriate treatment in the financial statements of each of the following.

a. Gain on sale of investment securities.

b. A profit-sharing bonus to employees computed as a percentage of net income.

c. Additional depreciation on factory machinery because of an error in computing depreciation for the previous year.

d. Rent received from subletting a portion of the office space.

e. A patent infringement suit, brought 2 years ago against the company by another company, was settled this year by a cash payment of $725,000.

f. A reduction in the Allowance for Doubtful Accounts balance because the account appears to be considerably in excess of the probable loss from uncollectible receivables.

11. Indicate where the following items would ordinarily appear on the financial statements of Boleyn, Inc. for the year 2025.

a. The service life of certain equipment was changed from 8 to 5 years. If a 5-year life had been used previously, additional depreciation of $425,000 would have been charged.

b. In 2025, a flood destroyed a warehouse that had a book value of $1,600,000. Floods are rare in this locality.

c. In 2025, the company wrote off $1,000,000 of inventory that was considered obsolete.

***d.** In 2022, a supply warehouse with an expected useful life of 7 years was erroneously expensed.

***e.** Boleyn, Inc. changed from weighted-average to FIFO inventory pricing.

12. Indicate the section of a multiple-step income statement in which each of the following is shown.

a. Loss on inventory write-down.

b. Loss from strike.

c. Bad debt expense.

d. Loss on disposal of a discontinued operation.

e. Gain on sale of machinery.

f. Interest revenue.

g. Depreciation expense.

h. Material write-offs of notes receivable.

13. Perlman Land Development, Inc. purchased land for $70,000 and spent $30,000 developing it. It then sold the land for $160,000. Sheehan Manufacturing purchased land for a future plant site for $100,000. Due to a change in plans, Sheehan later sold the land for $160,000. Should these two companies report the land sales, both at gains of $60,000, in a similar manner?

14. You run into Greg Norman at a party and begin discussing financial statements. Greg says, "I prefer the single-step income statement because the multiple-step format generally overstates income." How should you respond to Greg?

15. Santo Corporation has eight expense accounts in its general ledger which could be classified as selling expenses. Should Santo report these eight expenses separately in its income statement or simply report one total amount for selling expenses?

16. Cooper Investments reported an unusual gain from the sale of certain assets in its 2025 income statement. How does intraperiod tax allocation affect the reporting of this unusual gain?

17. Discuss the appropriate treatment in the income statement for the following items:

a. Loss on discontinued operations.

b. Earnings per share.

c. Gain on sale of equipment.

18. What effect does intraperiod tax allocation have on reported net income?

19. Neumann Company computed earnings per share as follows.

$$\frac{\text{Net Income}}{\text{Common Shares Outstanding at Year-End}}$$

Neumann has a simple capital structure. What possible errors might the company have made in the computation? Explain.

20. Qualls Corporation reported 2025 earnings per share of $7.21. In 2026, Qualls reported earnings per share as follows.

On income from continuing operations	$6.40
On discontinued operations	1.88
On net income	$8.28

Is the increase in earnings per share from $7.21 to $8.28 a favorable trend?

21. What is meant by "tax allocation within a period"? What is the justification for such practice?

22. When does tax allocation within a period become necessary? How should this allocation be handled?

23. During 2025, Liselotte Company reported income of $1,500,000 before income taxes and realized a gain of $450,000 on the disposal of assets related to a discontinued operation. The criteria for classification as a discontinued operation is appropriate for this sale. The income is subject to income taxation at the rate of 34%. The gain on the sale of the plant is taxed at 30%. Indicate an appropriate presentation of these items in the income statement.

24. On January 30, 2024, a suit was filed against Frazier Corporation under the Environmental Protection Act. On August 6, 2025, Frazier Corporation agreed to settle the action and pay $920,000 in damages to certain current and former employees. How should this settlement be reported in the 2025 financial statements? Discuss.

25. Linus Paper Company decided to close two small pulp mills in Conway, New Hampshire, and Corvallis, Oregon. These two closings do not represent a major shift in strategy for the company. Would these closings be reported in a separate section entitled "Discontinued operations after income from continuing operations"? Discuss.

26. What major types of items are reported in the retained earnings statement?

27. Generally accepted accounting principles usually require the use of accrual accounting to "fairly present" income. If the cash receipts and disbursements method of accounting will "clearly reflect" taxable income, why does this method not usually also "fairly present" income?

28. State some of the more serious problems encountered in seeking to achieve the ideal measurement of periodic net income. Explain what accountants do as a practical alternative.

29. What is meant by the terms **elements** and **items** as they relate to the income statement? Why might **items** have to be disclosed in the income statement?

30. What are the two ways that other comprehensive income may be displayed (reported)?

31. How should the disposal of a component of a business be disclosed in the income statement?

32. Identify the five steps in the revenue recognition process.

33. Explain the importance of a contract in the revenue recognition process.

34. Describe the critical factor in evaluating whether a performance obligation is satisfied.

35. When must multiple performance obligations in a revenue arrangement be accounted for separately?

36. What is the transaction price? What additional factors related to the transaction price must be considered in determining the transaction price?

37. Describe the revenue recognition principle.

38. What is earnings management?

39. How can earnings management affect the quality of earnings?

40. A *Wall Street Journal* article noted that **Apple** reported higher income than its competitors by using a more aggressive policy for recognizing revenue on future upgrades to its products. Some contend that Apple's quality of earnings is low. What does the term "quality of earnings" mean?

***41.** How should correction of errors be reported in the financial statements?

Brief Exercises

BE3.1 (LO 1) Starr Co. had sales revenue of $540,000 in 2025. Other items recorded during the year were as follows.

Cost of goods sold	$330,000
Salaries and wages expense	120,000
Income tax expense	25,000
Increase in value of company reputation	15,000
Other operating expenses	10,000
Unrealized gain on value of patents	20,000

Prepare a single-step income statement for Starr for 2025. Starr has 100,000 shares of stock outstanding.

BE3.2 (LO 1) Brisky Corporation had net sales of $2,400,000 and interest revenue of $31,000 during 2025. Expenses for 2025 were cost of goods sold $1,450,000, administrative expenses $212,000, selling expenses $280,000, and interest expense $45,000. Brisky's tax rate is 30%. The corporation had 100,000 shares of common stock authorized and 70,000 shares issued and outstanding during 2025. Prepare a single-step income statement for the year ended December 31, 2025.

BE3.3 (LO 1) Using the information provided in BE3.2, prepare a condensed multiple-step income statement for Brisky Corporation.

BE3.4 (LO 1, 2) Finley Corporation had income from continuing operations of $10,600,000 in 2025. During 2025, it disposed of its restaurant division at an after-tax loss of $189,000. Prior to disposal, the division operated at a loss of $315,000 (net of tax) in 2025 (assume that the disposal of the restaurant division meets the criteria for recognition as a discontinued operation). Finley had 10,000,000 shares of common stock outstanding during 2025. Prepare a partial income statement for Finley beginning with income from continuing operations.

BE3.5 (LO 1) Stacy Corporation had income from operations of $7,200,000. In addition, it suffered an unusual and infrequent pretax loss of $770,000 from a volcano eruption, interest revenue of $17,000, and a write-down (impairment) on buildings of $53,000. The corporation's tax rate is 30%. Prepare a partial income statement for Stacy beginning with Income from operations. The corporation had 5,000,000 shares of common stock outstanding during 2025.

BE3.6 (LO 1) In 2025, Hollis Corporation reported net income of $1,000,000. It declared and paid preferred stock dividends of $250,000. During 2025, Hollis had a weighted average of 190,000 common shares outstanding. Compute Hollis's 2025 earnings per share.

BE3.7 (LO 3) Portman Corporation has retained earnings of $675,000 at January 1, 2025. Net income during 2025 was $1,400,000, and cash dividends declared and paid during 2025 totaled $75,000. Prepare a retained earnings statement for the year ended December 31, 2025.

BE3.8 (LO 2) On January 1, 2025, Richards Inc. had cash and common stock of $60,000. At that date, the company had no other asset, liability, or stockholders' equity balances. On January 2, 2025, it purchased for cash $20,000 of debt securities that it classified as available-for-sale. It received interest of $3,000 during the year on these securities. In addition, it has an unrealized holding gain on these securities of $4,000 net of tax. Determine the following amounts for 2025: (a) net income, (b) comprehensive income, (c) other comprehensive income, and (d) accumulated other comprehensive income (end of 2025).

BE3.9 (LO 4) Leno Computers manufactures tablet computers for sale to retailers such as Fallon Electronics. Recently, Leno sold and delivered 200 tablet computers to Fallon for $20,000 on January 5, 2025. Fallon has agreed to pay for the 200 tablet computers within 30 days. Fallon has a good credit rating and should have no difficulty in making payment to Leno. (a) Explain whether a valid contract exists between Leno Computers and Fallon Electronics. (b) Assuming that Leno Computers has not yet delivered the tablet computers to Fallon Electronics, what might cause a valid contract not to exist between Leno and Fallon?

BE3.10 (LO 4) Hillside Company enters into a contract with Sanchez Inc. to provide a software license and 3 years of customer support. The customer-support services require specialized knowledge that only Hillside Company's employees can perform. How many performance obligations are in the contract?

BE3.11 (LO 4) Destin Company signs a contract to manufacture a new 3D printer for $80,000. The contract includes installation which costs $4,000 and a maintenance agreement over the life of the printer at a cost of $10,000. The printer cannot be operated without the installation. Destin Company as well as other companies could provide the installation and maintenance agreement. What are Destin Company's performance obligations in this contract?

BE3.12 (LO 4) Ismail Construction enters into a contract to design and build a hospital. Ismail is responsible for the overall management of the project and identifies various goods and services to be provided,

including engineering, site clearance, foundation, procurement, construction of the structure, piping and wiring, installation of equipment, and finishing. Does Ismail have a single performance obligation to the customer in this revenue arrangement? Explain.

BE3.13 (LO 4) Nair Corp. enters into a contract with a customer to build an apartment building for $1,000,000. The customer hopes to rent apartments at the beginning of the school year and provides a performance bonus of $150,000 to be paid if the building is ready for rental beginning August 1, 2026. The bonus is reduced by $50,000 each week that completion is delayed. Nair commonly includes these completion bonuses in its contracts and, based on prior experience, estimates the following completion outcomes.

August 1, 2026	70%
August 8, 2026	20
August 15, 2026	5
After August 15, 2026	5

Determine the transaction price for this contract.

BE3.14 (LO 4) On May 1, 2025, Mount Company enters into a contract to transfer a product to Eric Company on September 30, 2025. It is agreed that Eric will pay the full price of $25,000 in advance on June 15, 2025. Eric pays on June 15, 2025, and Mount delivers the product on September 30, 2025. How much revenue does Mount recognize (a) June 15, 2025 and (b) September 30, 2025.

*__BE3.15 (LO 6)__ During 2025, Williamson Company changed from FIFO to weighted-average inventory pricing. Pretax income in 2024 and 2023 (Williamson's first year of operations) under FIFO was $160,000 and $180,000, respectively. Pretax income using weighted-average pricing in the prior years would have been $145,000 in 2024 and $170,000 in 2023. In 2025, Williamson reported pretax income (using weighted-average pricing) of $180,000. Show comparative income statements for Williamson, beginning with "Income before income tax," as presented on the 2025 income statement. (The tax rate in all years is 30%.)

*__BE3.16 (LO 6)__ Vandross Company has recorded bad debt expense in the past at a rate of 1½% of accounts receivable, based on an aging analysis. In 2025, Vandross decides to increase its estimate to 2%. If the new rate had been used in prior years, cumulative bad debt expense would have been $380,000 instead of $285,000. In 2025, bad debt expense will be $120,000 instead of $90,000. If Vandross's tax rate is 30%, what amount should it report as the cumulative effect of changing the estimated bad debt rate?

*__BE3.17 (LO 6)__ Using the information from BE3.7, prepare a retained earnings statement for the year ended December 31, 2025. Assume an error was discovered: land costing $80,000 (net of tax) was charged to maintenance and repairs expense in 2025.

Exercises

E3.1 (LO 1) (Computation of Net Income) Presented below are changes in all the account balances of Fritz Mayhew Furniture Co. during the current year, except for retained earnings.

	Increase (Decrease)		Increase (Decrease)
Cash	$ 79,000	Accounts Payable	$ (51,000)
Accounts Receivable (net)	45,000	Bonds Payable	82,000
Inventory	127,000	Common Stock	125,000
Investments	(47,000)	Paid-In Capital in Excess of Par—Common Stock	13,000

Instructions

Compute the net income for the current year, assuming that there were no entries in the Retained Earnings account except for net income and a dividend declaration of $19,000 which was paid in the current year.

E3.2 (LO 1, 2) (Compute Income Measures) Presented below is information related to Viel Company at December 31, 2025, the end of its first year of operations.

Sales revenue	$310,000
Cost of goods sold	140,000
Selling and administrative expenses	50,000
Gain on sale of plant assets	30,000
Unrealized gain on available-for-sale debt investments	10,000
Interest expense	6,000
Loss on discontinued operations	12,000
Dividends declared and paid	5,000

Instructions

Compute the following: (a) income from operations, (b) net income, (c) comprehensive income, and (d) retained earnings balance at December 31, 2025. (Ignore income tax effects.)

E3.3 (LO 1) (Income Statement Items) Presented below are certain account balances of Paczki Products Co.

Rent revenue	$ 6,500	Sales discounts	$ 7,800
Interest expense	12,700	Selling expenses	99,400
Beginning retained earnings	114,400	Sales revenue	390,000
Ending retained earnings	125,000	Income tax expense	31,000
Dividend revenue	71,000	Cost of goods sold	184,400
Sales returns and allowances	12,400	Administrative expenses	82,500

Instructions

From the foregoing, compute the following: (a) total net revenue and (b) net income.

E3.4 (LO 1) (Single-Step Income Statement) The financial records of LeRoi Jones Inc. were destroyed by fire at the end of 2025. Fortunately, the controller had kept certain statistical data related to the income statement as follows.

1. The beginning merchandise inventory was $92,000 and decreased 20% during the current year.
2. Sales discounts amount to $17,000.
3. 20,000 shares of common stock were outstanding for the entire year.
4. Interest expense was $20,000.
5. The income tax rate is 30%.
6. Cost of goods sold amounts to $500,000.
7. Administrative expenses are 20% of cost of goods sold but only 8% of gross sales.
8. Four-fifths of the operating expenses relate to sales activities.

Instructions

From the foregoing information prepare an income statement for the year 2025 in single-step form.

E3.5 (LO 1) Excel (Multiple-Step and Single-Step Statements) Two accountants for the firm of Elwes and Wright are arguing about the merits of presenting an income statement in a multiple-step versus a single-step format. The discussion involves the following 2025 information related to P. Bride Company ($000 omitted).

Administrative expense	
Officers' salaries	$ 4,900
Depreciation of office furniture and equipment	3,960
Cost of goods sold	60,570
Rent revenue	17,230
Selling expense	
Delivery expense	2,690
Sales commissions	7,980
Depreciation of sales equipment	6,480
Sales revenue	96,500
Income tax	9,070
Interest expense	1,860

Instructions

a. Prepare an income statement for the year 2025 using the multiple-step form. Common shares outstanding for 2025 total 40,550 (000 omitted).

b. Prepare an income statement for the year 2025 using the single-step form.

c. Which one do you prefer? Discuss.

E3.6 (LO 1) (Multiple-Step Statement) The following balances were taken from the books of Alonzo Corp. on December 31, 2025.

Interest revenue	$ 86,000	Accumulated depreciation—equipment	$ 40,000
Cash	51,000	Accumulated depreciation—buildings	28,000
Sales revenue	1,380,000	Notes receivable	155,000
Accounts receivable	150,000	Selling expenses	194,000
Prepaid insurance	20,000	Accounts payable	170,000
Sales returns and allowances	150,000	Bonds payable	100,000
Allowance for doubtful accounts	7,000	Administrative and general expenses	97,000

Sales discounts	45,000	Accrued liabilities	32,000
Land	100,000	Interest expense	60,000
Equipment	200,000	Notes payable	100,000
Buildings	140,000	Loss from earthquake damage	150,000
Cost of goods sold	621,000	Common stock	500,000
		Retained earnings	21,000

Assume the total effective tax rate on all items is 20%.

Instructions

Prepare a multiple-step income statement; 100,000 shares of common stock were outstanding during the year.

E3.7 (LO 1) (Multiple-Step and Single-Step Statements) The accountant of Latifa Shoe Co. has compiled the following information from the company's records as a basis for an income statement for the year ended December 31, 2025.

Rent revenue	$ 29,000
Interest expense	18,000
Market appreciation on land above cost	31,000
Salaries and wages expense (selling)	114,800
Supplies (selling)	17,600
Income tax	23,100
Salaries and wages expense (administrative)	135,900
Other administrative expenses	51,700
Cost of goods sold	496,000
Net sales	980,000
Depreciation on plant assets (70% selling, 30% administrative)	65,000
Cash dividends declared	16,000

There were 20,000 shares of common stock outstanding during the year.

Instructions

a. Prepare a multiple-step income statement.

b. Prepare a single-step income statement.

c. Which format do you prefer? Discuss.

E3.8 (LO 1, 2) (Income Statement, EPS) Presented below are selected ledger accounts of Tucker Corporation as of December 31, 2025.

Cash	$ 50,000
Administrative expenses	100,000
Selling expenses	80,000
Net sales	540,000
Cost of goods sold	210,000
Cash dividends declared (2025)	20,000
Cash dividends paid (2025)	15,000
Discontinued operations (loss before income taxes)	40,000
Depreciation expense, not recorded in 2024	30,000
Retained earnings, December 31, 2024	90,000
Effective tax rate 20%	

Instructions

a. Compute net income for 2025.

b. Prepare a partial income statement beginning with income from continuing operations before income tax, and include appropriate earnings per share information. Assume 10,000 shares of common stock were outstanding during 2025.

E3.9 (LO 1, 3) (Multiple-Step Statement with Retained Earnings Statement) Presented below is information related to Ivan Calderon Corp. for the year 2025.

Net sales	$1,300,000	Write-off of inventory due to obsolescence	$ 80,000
Cost of goods sold	780,000	Depreciation expense omitted by accident in 2024	55,000
Selling expenses	65,000	Casualty loss	50,000
Administrative expenses	48,000	Cash dividends declared	45,000
Dividend revenue	20,000	Retained earnings at December 31, 2024	980,000
Interest revenue	7,000	Effective tax rate of 20% on all items	

Instructions

a. Prepare a multiple-step income statement for 2025. Assume that 60,000 shares of common stock are outstanding for the entire year.

b. Prepare a separate retained earnings statement for 2025.

E3.10 (LO 1) (Earnings per Share) The stockholders' equity section of Hendly Corporation appears below as of December 31, 2025.

8% preferred stock, $50 par value, authorized 100,000 shares, outstanding 90,000 shares	$ 4,500,000
Common stock, $1.00 par, authorized and issued 10 million shares	10,000,000
Additional paid-in capital	20,500,000
Retained earnings (includes 2025 net income of $33,000,000)	167,000,000
Total stockholders' equity	202,000,000

Net income for 2025 reflects a total effective tax rate of 20%. Included in the net income figure is a loss of $18,000,000 (before tax) as a result of a non-recurring major casualty. Preferred stock dividends of $360,000 were declared and paid in 2025. Dividends of $1,000,000 were declared and paid to common stockholders in 2025.

Instructions

Compute earnings per share data as it should appear on the income statement of Hendly Corporation.

E3.11 (LO 1) (Condensed Income Statement—Periodic Inventory Method) The following are selected ledger accounts of Spock Corporation at December 31, 2025.

Cash	$ 185,000	Salaries and wages expense (sales)	$ 284,000
Inventory	535,000	Salaries and wages expense (office)	346,000
Sales revenue	4,275,000	Purchase returns	15,000
Unearned sales revenue	117,000	Sales returns and allowances	79,000
Purchases	2,786,000	Freight-in	72,000
Sales discounts	34,000	Accounts receivable	142,500
Purchase discounts	27,000	Sales commissions	83,000
Selling expenses	69,000	Telephone and Internet expense (sales)	17,000
Accounting and legal services	33,000	Utilities expense (office)	32,000
Insurance expense (office)	24,000	Miscellaneous office expenses	8,000
Advertising expense	54,000	Rent revenue	240,000
Delivery expense	93,000	Casualty loss (before tax)	70,000
Depreciation expense (office equipment)	48,000	Interest expense	176,000
Depreciation expense (sales equipment)	36,000	Common stock ($10 par)	900,000

Spock's effective tax rate on all items is 20%. A physical inventory indicates that the ending inventory is $686,000.

Instructions

Prepare a condensed 2025 multi-step income statement for Spock Corporation.

E3.12 (LO 3) Excel (Retained Earnings Statement) Eddie Zambrano Corporation began operations on January 1, 2022. During its first 3 years of operations, Zambrano reported net income and declared dividends as follows.

	Net Income	Dividends Declared
2022	$ 40,000	$ –0–
2023	125,000	50,000
2024	160,000	50,000

The following information relates to 2025.

Income before income tax	$240,000
Prior period adjustment: understatement of 2023 depreciation expense (before taxes)	25,000
Dividends declared (of this amount, $25,000 will be paid on Jan. 15, 2026)	100,000
Effective tax rate	20%

Instructions

a. Prepare a 2025 retained earnings statement for Eddie Zambrano Corporation.

b. Assume Eddie Zambrano Corporation restricted retained earnings in the amount of $70,000 on December 31, 2025. After this action, what would Zambrano report as total retained earnings in its December 31, 2025, balance sheet?

E3.13 (LO 1, 2) (Earnings per Share) At December 31, 2024, Shiga Naoya Corporation had the following stock outstanding.

10% cumulative preferred stock, $100 par, 107,500 shares	$10,750,000
Common stock, $5 par, 4,000,000 shares	20,000,000

During 2025, Shiga Naoya did not issue any additional common stock. The following also occurred during 2025.

Income from continuing operations before taxes	$23,650,000
Discontinued operations (loss before taxes)	3,225,000
Preferred dividends declared	1,075,000
Common dividends declared	2,200,000
Effective tax rate	17%

Instructions

Compute earnings per share data as it should appear in the 2025 income statement of Shiga Naoya Corporation. (Round to two decimal places.)

E3.14 (LO 2) (Comprehensive Income) Roxanne Carter Corporation reported the following for 2025: net sales $1,200,000, cost of goods sold $750,000, selling and administrative expenses $320,000, and an unrealized holding gain on available-for-sale debt securities $18,000.

Instructions

Prepare a statement of comprehensive income, using (a) the one statement format, and (b) the two statement format. (Ignore income taxes and earnings per share.)

E3.15 (LO 3) (Comprehensive Income) C. Reither Co. reports the following information for 2025: sales revenue $700,000, cost of goods sold $500,000, operating expenses $80,000, and an unrealized holding loss on available-for-sale debt securities for 2025 of $60,000. It declared and paid a cash dividend of $10,000 in 2025.

C. Reither Co. has January 1, 2025, balances in common stock $350,000; accumulated other comprehensive income $80,000; and retained earnings $90,000. It issued no stock during 2025.

Instructions

Prepare a statement of stockholders' equity. (Ignore income taxes.)

E3.16 (LO 1, 2, 3) (Various Reporting Formats) The following information was taken from the records of Roland Carlson Inc. for the year 2025: income tax applicable to income from continuing operations $187,000, income tax applicable to loss on discontinued operations $25,500, and unrealized holding gain on available-for-sale debt securities (net of tax) $15,000.

Gain on sale of equipment	$ 95,000	Cash dividends declared	$ 150,000
Loss on discontinued operations	75,000	Retained earnings January 1, 2025	600,000
Administrative expenses	240,000	Cost of goods sold	850,000
Rent revenue	40,000	Selling expenses	300,000
Loss on write-down of inventory	60,000	Sales revenue	1,900,000

Shares outstanding during 2025 were 100,000.

Instructions

a. Prepare a single-step income statement (with respect to items in Income from operations).

b. Prepare a comprehensive income statement for 2025, using the two statement format.

c. Prepare a retained earnings statement for 2025.

E3.17 (LO 4) (Fundamentals of Revenue Recognition) Consider the following.

1. One of the main indicators of whether control has passed to the customer is whether revenue has been earned. Is this statement correct?

2. One of the criteria that contracts must meet to apply the revenue standard is that collectibility of the sales price must be reasonably possible. Is this correct?
3. A wholly unperformed contract is one in which the company has neither transferred the promised goods or services to the customer nor received, or become entitled to receive, any consideration. Why are these contracts not recorded in the accounts?
4. Performance obligations are the unit of account for purposes of applying the revenue recognition standard and therefore determine when and how revenue is recognized. Is this statement correct?
5. Elaina Company contracts with a customer and provides the customer with an option to purchase additional goods for free or at a discount. Should Elaina Company account for this option?
6. The transaction price is generally not adjusted to reflect the customer's credit risk, meaning the risk that the customer will not pay the amount to which the entity is entitled to under the contract. Comment on this statement.

Instructions

Provide an answer to each of these questions.

E3.18 (LO 4) (Determine Transaction Price) Jeff Heun, president of Concrete Always, agrees to construct a concrete cart path at Dakota Golf Club. Concrete Always enters into a contract with Dakota to construct the path for $200,000. In addition, as part of the contract, a performance bonus of $40,000 will be paid based on the timing of completion. The performance bonus will be paid fully if completed by the agreed-upon date. The performance bonus decreases by $10,000 per week for every week beyond the agreed-upon completion date. Jeff has been involved in a number of contracts that had performance bonuses as part of the agreement in the past. As a result, he is fairly confident that he will receive a good portion of the performance bonus. Jeff estimates, given the constraints of his schedule related to other jobs, that there is 55% probability that he will complete the project on time, a 30% probability that he will be 1 week late, and a 15% probability that he will be 2 weeks late.

Instructions

a. Determine the transaction price that Concrete Always should compute for this agreement.

b. Assume that Jeff Heun has reviewed his work schedule and decided that it makes sense to complete this project on time. Assuming that he now believes that the probability for completing the project on time is 90% and otherwise it will be finished 1 week late, determine the transaction price.

E3.19 (LO 4) (Allocate Transaction Price) Shaw Company sells goods that cost $300,000 to Ricard Company for $410,000 on January 2, 2025. The sales price includes an installation fee, which has a stand-alone selling price of $40,000. The standalone selling price of the goods is $370,000. The installation is considered a separate performance obligation and is expected to take 6 months to complete (installation was completed on June 18, 2025).

Instructions

a. How much revenue does Shaw record on January 2, 2025?

b. How much income should Shaw report related to its sale to Ricard in its income statement prepared for the quarter ended March 31, 2025?

***E3.20 (LO 6) (Change in Accounting Principle)** Tim Mattke Company began operations in 2023 and for simplicity reasons, adopted weighted-average pricing for inventory. In 2025, in accordance with other companies in its industry, Mattke changed its inventory pricing to FIFO. The pretax income data is reported below.

Year	Weighted-Average	FIFO
2023	$370,000	$395,000
2024	390,000	430,000
2025	410,000	450,000

Instructions

a. What is Mattke's net income in 2025? Assume a 20% tax rate in all years.

b. Compute the cumulative effect of the change in accounting principle from weighted-average to FIFO inventory pricing.

c. Show comparative income statements for Tim Mattke Company, beginning with income before income tax, as presented on the 2025 income statement.

Problems

P3.1 (LO 1, 2, 3) (Multiple-Step Statement, Retained Earnings Statement) The following information is related to Dickinson Company for 2025.

Retained earnings balance, January 1, 2025	$ 980,000
Sales revenue	25,000,000
Cost of goods sold	16,000,000
Interest revenue	70,000
Selling and administrative expenses	4,700,000
Write-off of goodwill	820,000
Income taxes for 2025	1,244,000
Gain on the sale of investments	110,000
Loss due to flood damage	390,000
Loss on the disposition of the wholesale division (net of tax)	440,000
Loss on operations of the wholesale division (net of tax)	90,000
Dividends declared on common stock	250,000
Dividends declared on preferred stock	80,000

Dickinson Company decided to discontinue its entire wholesale operations (considered a discontinued operation) and to retain its manufacturing operations. On September 15, Dickinson sold the wholesale operations to Rogers Company. During 2025, there were 500,000 shares of common stock outstanding all year.

Instructions

Prepare a multiple-step income statement and a retained earnings statement.

P3.2 (LO 1, 3) Excel (Single-Step Statement, Retained Earnings Statement, Periodic Inventory) The following is the trial balance of Thompson Corporation at December 31, 2025.

Thompson Corporation
Trial Balance
December 31, 2025

	Debit	Credit
Purchase Discounts		$ 10,000
Cash	$ 189,700	
Accounts Receivable	105,000	
Rent Revenue		18,000
Retained Earnings		160,000
Salaries and Wages Payable		18,000
Sales Revenue		1,100,000
Notes Receivable	110,000	
Accounts Payable		49,000
Accumulated Depreciation—Equipment		28,000
Sales Discounts	14,500	
Sales Returns and Allowances	17,500	
Notes Payable		70,000
Selling Expenses	232,000	
Administrative Expenses	99,000	
Common Stock		300,000
Income Tax Expense	53,900	
Cash Dividends	45,000	
Allowance for Doubtful Accounts		5,000
Supplies	14,000	
Freight-In	20,000	
Land	70,000	
Equipment	140,000	
Bonds Payable		100,000
Gain on Sale of Land		30,000
Accumulated Depreciation—Buildings		19,600
Inventory (January 1, 2025)	89,000	
Buildings	98,000	
Purchases	610,000	
Totals	$1,907,600	$1,907,600

A physical count of inventory on December 31 resulted in an inventory amount of $64,000; thus, cost of goods sold for 2025 is $645,000.

Instructions

Prepare a single-step income statement and a retained earnings statement. Assume that the only changes in retained earnings during the current year were from net income and dividends. Thirty thousand shares of common stock were outstanding the entire year.

***P3.3 (LO 1, 2, 6) Excel Groupwork (Various Income-Related Items)** Maher Inc. reported income from continuing operations before taxes during 2025 of $790,000. Additional transactions occurring in 2025 but not considered in the $790,000 are as follows.

1. The corporation experienced an uninsured flood loss in the amount of $90,000 during the year.
2. At the beginning of 2023, the corporation purchased a machine for $54,000 (salvage value of $9,000) that had a useful life of 6 years. The bookkeeper used straight-line depreciation for 2023, 2024, and 2025, but failed to deduct the salvage value in computing the depreciation base.
3. Sale of securities held as a part of its portfolio resulted in a loss of $57,000 (pretax).
4. When its president died, the corporation realized $150,000 from an insurance policy. The cash surrender value of this policy had been carried on the books as an investment in the amount of $46,000 (the gain is nontaxable).
5. The corporation disposed of its recreational division at a loss of $115,000 before taxes. Assume that this transaction meets the criteria for discontinued operations.
6. The corporation decided to change its method of inventory pricing from average-cost to the FIFO method. The effect of this change on prior years is to increase 2023 income by $60,000 and decrease 2024 income by $20,000 before taxes. The FIFO method has been used for 2025. The tax rate on these items is 30%.

Instructions

Prepare an income statement for the year 2025 starting with income from continuing operations before taxes. Compute earnings per share as it should be shown on the face of the income statement. Common shares outstanding for the year are 120,000 shares. (Assume a tax rate of 30% on all items, unless indicated otherwise.)

P3.4 (LO 1, 3) (Multiple- and Single-Step Statements, Retained Earnings Statement) The following account balances were included in the trial balance of Twain Corporation at June 30, 2025.

Sales revenue	$1,578,500	Depreciation expense (office furniture and equipment)	$ 7,250
Sales discounts	31,150	Property tax expense	7,320
Cost of goods sold	896,770	Bad debt expense (selling)	4,850
Salaries and wages expense (sales)	56,260	Maintenance and repairs expense (administration)	9,130
Sales commissions	97,600	Office expense	6,000
Travel expense (salespersons)	28,930	Sales returns and allowances	62,300
Delivery expense	21,400	Dividends revenue	38,000
Entertainment expense	14,820	Interest expense	18,000
Telephone and Internet expense (sales)	9,030	Income tax expense	102,000
Depreciation expense (sales equipment)	4,980	Depreciation understatement due to error—2022 (net of tax)	17,700
Maintenance and repairs expense (sales)	6,200	Dividends declared on preferred stock	9,000
Miscellaneous selling expenses	4,715	Dividends declared on common stock	37,000
Office supplies used	3,450		
Telephone and Internet expense (administration)	2,820		

The Retained Earnings account had a balance of $337,000 at July 1, 2024. There are 80,000 shares of common stock outstanding.

Instructions

a. Using the multiple-step form, prepare an income statement and a retained earnings statement for the year ended June 30, 2025.

b. Using the single-step form, prepare an income statement and a retained earnings statement for the year ended June 30, 2025.

P3.5 (LO 1, 3) (Unusual or Infrequent Items) Presented below is a combined single-step income and retained earnings statement for Nerwin Company for 2025.

		(000 omitted)
Net sales revenue		$640,000
Costs and expenses		
Cost of goods sold	$500,000	
Selling, general, and administrative expenses	66,000	
Other, net	17,000	583,000
Income before income tax		57,000
Income tax		19,400
Net income		37,600
Retained earnings at beginning of period, as previously reported	141,000	
Adjustment required for correction of error	(7,000)	
Retained earnings at beginning of period, as restated		134,000
Dividends on common stock		(12,200)
Retained earnings at end of period		$159,400

Additional facts are as follows.

1. "Selling, general, and administrative expenses" for 2025 included a charge of $8,500,000 that was usual but infrequently occurring.
2. "Other, net" for 2025 included a loss on sale of equipment of $6,000,000.
3. "Adjustment required for correction of an error" was a result of a change in estimate (useful life of certain assets reduced to 8 years and a catch-up adjustment made).
4. Nerwin Company disclosed earnings per common share for net income in the notes to the financial statements.

Instructions

Determine from these additional facts whether the presentation of the facts in the Nerwin Company income and retained earnings statement is appropriate. If the presentation is not appropriate, describe the appropriate presentation and discuss its theoretical rationale. (Do not prepare a revised statement.)

P3.6 (LO 1, 2, 3) (Retained Earnings Statement, Prior Period Adjustment) Below is the Retained Earnings account for the year 2025 for Acadian Corp.

Retained earnings, January 1, 2025		$257,600
Add:		
Gain on sale of investments (net of tax)	$41,200	
Net income	84,500	
Refund on litigation with government, related to the year 2022 (net of tax)	21,600	
Recognition of income earned in 2024, but omitted from income statement in that year (net of tax)	25,400	172,700
		430,300
Deduct:		
Loss on discontinued operations (net of tax)	35,000	
Write-off of goodwill (net of tax)	60,000	
Cumulative effect on income of prior years in changing from LIFO to FIFO inventory valuation in 2025 (net of tax)	23,200	
Cash dividends declared	32,000	150,200
Retained earnings, December 31, 2025		$280,100

Instructions

a. Prepare a corrected retained earnings statement. Acadian Corp. normally sells investments of the type mentioned above. FIFO inventory was used in 2025 to compute net income.

b. State where the items that do not appear in the corrected retained earnings statement should be shown.

P3.7 (LO 1, 2, 3) Groupwork (Income Statement, Irregular Items) Wade Corp. has 150,000 shares of common stock outstanding. In 2025, the company reports income from continuing operations before income tax of $1,210,000. Additional transactions not considered in the $1,210,000 are as follows.

1. In 2025, Wade Corp. sold equipment for $40,000. The machine had originally cost $80,000 and had accumulated depreciation of $30,000. The gain or loss is considered non-recurring.
2. The company discontinued operations of one of its subsidiaries during the current year at a loss of $190,000 before taxes. Assume that this transaction meets the criteria for discontinued operations. The loss from operations of the discontinued subsidiary was $90,000 before taxes; the loss from disposal of the subsidiary was $100,000 before taxes.
3. An internal audit discovered that amortization of intangible assets was understated by $35,000 (net of tax) in a prior period. The amount was charged against retained earnings.
4. The company recorded a non-recurring gain of $125,000 on the condemnation of some of its property (this item was included in the $1,210,000).

Instructions

Analyze the above information and prepare an income statement for the year 2025, starting with income from continuing operations before income tax. Compute earnings per share as it should be shown on the face of the income statement. (Assume a total effective tax rate of 19% on all items, unless otherwise indicated.)

Using Your Judgment

Financial Reporting Problem: The Proctor & Gamble Company (P&G)

UYJ3.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What type of income statement format does P&G use? Indicate why this format might be used to present income statement information.

b. What are P&G's primary revenue sources?

c. Compute P&G's gross profit for each of the years 2018–2020. Explain why gross profit decreased in 2020.

d. Why does P&G make a distinction between operating and nonoperating revenue?

e. What financial ratios did P&G choose to report in its "Financial Summary" section covering the years 2015–2020?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ3.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What type of income format(s) is used by these two companies? Identify any differences in income statement format between these two companies.

b. What are the gross profits, operating profits, and net incomes for these two companies over the 3-year period 2018–2020? Which company has had better financial results over this period of time?

c. What income statement format do these two companies use to report comprehensive income?

Financial Statement Analysis Case: Bankruptcy Prediction

UYJ3.3 The Z-score bankruptcy prediction model uses balance sheet and income information to arrive at a Z-score, which can be used to predict financial distress:

$$Z = \frac{\text{Working capital}}{\text{Total assets}} \times 1.2 + \frac{\text{Retained earnings}}{\text{Total assets}} \times 1.4 + \frac{\text{EBIT}}{\text{Total assets}} \times 3.3$$
$$+ \frac{\text{Sales}}{\text{Total assets}} \times 0.99 + \frac{\text{MV equity}}{\text{Total liabilities}} \times 0.6$$

EBIT is earnings before interest and taxes. MV equity is the market value of common equity, which can be determined by multiplying stock price by shares outstanding.

Following extensive testing, it has been shown that companies with Z-scores above 3.0 are unlikely to fail; those with Z-scores below 1.81 are very likely to fail. While the original model was developed for publicly held manufacturing companies, the model has been modified to apply to companies in various industries, emerging companies, and companies not traded in public markets.

Instructions

a. Use information in the financial statements of **Walgreens** to compute the Z-score for the years 2019 and 2020. (Walgreens' financial information may be found online.)

b. Interpret your result. Where does the company fall in the financial distress range?

c. The Z-score uses EBIT as one of its elements. Why do you think this income measure is used?

Financial Statement Analysis Case: P/E Ratios

UYJ3.4 One of the more closely watched ratios by investors is the price-earnings (P/E) ratio. By dividing price per share by earnings per share, analysts get insight into the value the market attaches to a company's earnings. More specifically, a high P/E ratio (in comparison to companies in the same industry) may suggest the stock is overpriced. Also, there is some evidence that companies with low P/E ratios are underpriced and tend to outperform the market. However, the ratio can be misleading.

P/E ratios are sometimes misleading because the E (earnings) is subject to a number of assumptions and estimates that could result in overstated earnings and a lower P/E. Some analysts conduct "revenue analysis" to evaluate the quality of an earnings number. Revenues are less subject to management estimates and all earnings must begin with revenues. These analysts also compute the price-to-sales ratio (PSR = Price per share ÷ Sales per share) to assess whether a company is performing well compared to similar companies. If a company has a price-to-sales ratio significantly higher than its competitors, investors may be betting on a stock that has yet to prove itself. [See Janice Revell, "Beyond P/E," *Fortune* (May 28, 2001), p. 174.]

Instructions

a. Identify some of the estimates or assumptions that could result in overstated earnings.

b. Compute the P/E ratio and the PSR for **Tootsie Roll** and **Hershey** for 2020 (these data can be found online).

c. Use these data to compare the quality of each company's earnings.

Accounting, Analysis, and Principles

UYJ3.5 Counting Crows Inc. provided the following information for the year 2025.

Retained earnings, January 1, 2025	$ 600,000
Administrative expenses	240,000
Selling expenses	300,000
Sales revenue	1,900,000
Cash dividends declared	80,000
Cost of goods sold	850,000
Loss on discontinued operations	110,000
Rent revenue	102,700
Unrealized holding gain on available-for-sale debt securities	17,000
Income tax applicable to continuing operations	187,000
Income tax benefit applicable to loss on discontinued operations	60,500
Income tax applicable to unrealized holding gain on available-for-sale debt securities	2,000

Accounting

Prepare (a) a single-step income statement for 2025, (b) a retained earnings statement for 2025 and (c) a statement of comprehensive income using the two statement format. Shares outstanding during 2025 were 100,000.

Analysis

Explain how a multiple-step income statement format can provide useful information to a financial statement user.

Principles

In a recent meeting with its auditor, Counting Crows' management argued that the company should be able to prepare a non-GAAP income statement with some one-time administrative expenses reported similar to discontinued operations. Is such reporting consistent with the qualitative characteristics of accounting information as discussed in the conceptual framework? Explain.

Developing Your Professional Skills

Critical-Thinking Cases

CT3.1 (LO 1, 2) (Identification of Income Statement Deficiencies) O'Malley Corporation was incorporated and began business on January 1, 2022. It has been successful and now requires a bank loan for additional working capital to finance expansion. The bank has requested an audited income statement for the year 2025. The accountant for O'Malley Corporation provides you with the following income statement which O'Malley plans to submit to the bank.

O'Malley Corporation Income Statement		
Sales revenue		$850,000
Dividends		32,300
Gain on recovery of insurance proceeds from earthquake loss		38,500
		920,800
Less:		
Selling expenses	$101,100	
Cost of goods sold	510,000	
Advertising expense	13,700	
Loss on obsolescence of inventories	34,000	
Loss on discontinued operations	48,600	
Administrative expense	73,400	780,800
Income before income tax		140,000
Income tax		56,000
Net income		$ 84,000

Instructions

Indicate the deficiencies in the income statement presented above. Assume that the corporation desires a single-step income statement.

CT3.2 (LO 5) Groupwork (Earnings Management) Bobek Inc. has recently reported steadily increasing income. The company reported income of $20,000 in 2022, $25,000 in 2023, and $30,000 in 2024. A number of market analysts have recommended that investors buy the stock because they expect the steady growth in income to continue. Bobek is approaching the end of its fiscal year in 2025, and it again appears to be a good year. However, it has not yet recorded warranty expense.

Based on prior experience, this year's warranty expense should be around $5,000, but some managers have approached the controller to suggest a larger, more conservative warranty expense should be recorded this year. Income before warranty expense is $43,000. Specifically, by recording a $7,000 warranty accrual this year, Bobek could report an increase in income for this year and still be in a position to cover its warranty costs in future years.

Instructions

a. What is earnings management?

b. Assume income before warranty expense is $43,000 for both 2025 and 2026 and that total warranty expense over the 2-year period is $10,000. What is the effect of the proposed accounting in 2025? In 2026?

c. What is the appropriate accounting in this situation?

CT3.3 (LO 5) Ethics (Earnings Management) Charlie Brown, controller for Kelly Corporation, is preparing the company's income statement at year-end. He notes that the company lost a considerable sum on the sale of some equipment it had decided to replace. Since the company has sold equipment routinely in the past, Brown knows the losses cannot be reported as an unusual item. He also does not want to highlight it as a material loss since he feels that will reflect poorly on him and the company. He reasons that if the company had recorded more depreciation during the assets' lives, the losses would not be so great. Since depreciation is included among the company's operating expenses, he wants to report the losses along with the company's expenses, where he hopes it will not be noticed.

Instructions

a. What are the ethical issues involved?

b. What should Brown do?

CT3.4 (LO 1, 2) (Income Reporting Items) Simpson Corp. is an entertainment firm that derives approximately 30% of its income from the Casino Knights Division, which manages gambling facilities. As auditor for Simpson Corp., you have recently overheard the following discussion between the controller and financial vice president.

Vice President: If we sell the Casino Knights Division, it seems ridiculous to segregate the results of the sale in the income statement. Separate categories tend to be absurd and confusing to the stockholders. I believe that we should simply report the gain on the sale as other income or expense without detail.

Controller: Professional pronouncements would require that we report this information separately in the income statement. If a sale of this type is considered unusual and infrequent, it must be reported separate from income from continuing operations.

Vice President: What about the walkout we had last month when employees were upset about their commission income? Would this situation not also be subject to reporting outside operating income?

Controller: I am not sure whether this item should get special reporting or not.

Vice President: Oh well, it doesn't make any difference because the net effect of all these items is immaterial, so no disclosure is necessary.

Instructions

a. On the basis of the foregoing discussion, answer the following questions. Who is correct about handling the sale? What would be the correct income statement presentation for the sale of the Casino Knights Division?

b. How should the walkout by the employees be reported?

c. What do you think about the vice president's observation on materiality?

d. What are the earnings per share implications of these topics?

CT3.5 (LO 1, 2) (Identification of Income Statement Weaknesses) The following financial statement was prepared by employees of Walters Corporation.

Walters Corporation Income Statement Year Ended December 31, 2025	
Revenues	
Gross sales, including sales taxes	$1,044,300
Less: Returns, allowances, and cash discounts	56,200
Net sales	988,100
Dividends, interest, and purchase discounts	30,250
Recoveries of accounts written off in prior years	13,850
Total revenues	1,032,200
Costs and expenses	
Cost of goods sold, including sales taxes	465,900
Salaries and related payroll expenses	60,500
Rent	19,100
Delivery expense and freight-in	3,400
Bad debt expense	27,800
Total costs and expenses	576,700
Income before other items	455,500
Other items	
Loss on discontinued styles (Note 1)	71,500
Loss on sale of marketable securities (Note 2)	39,050
Loss on sale of warehouse (Note 3)	86,350
Total other items	196,900
Net income	$ 258,600
Net income per share of common stock	$2.30

Note 1: New styles and rapidly changing consumer preferences resulted in a $71,500 loss on the disposal of discontinued styles and related accessories.

Note 2: The corporation sold an investment in marketable securities at a loss of $39,050. The corporation normally sells securities of this nature.

Note 3: The corporation sold one of its warehouses at an $86,350 loss.

Instructions

Identify and discuss the weaknesses in classification and disclosure in the single-step income statement above. You should explain why these treatments are weaknesses and what the proper presentation of the items would be in accordance with GAAP.

CT3.6 (LO 1, 2, 3, 6) Ethics (Classification of Income Statement Items) As audit partner for Grupo and Rijo, you are in charge of reviewing the classification of unusual items that have occurred during the current year. The following material items have come to your attention.

1. A merchandising company incorrectly overstated its ending inventory 2 years ago. Inventory for all other periods is correctly computed.
2. An automobile dealer sells for $137,000 an extremely rare 1930 S type Invicta which it purchased for $21,000 10 years ago. The Invicta is the only such display item the dealer owns.
3. A drilling company during the current year extended the estimated useful life of certain drilling equipment from 9 to 15 years. As a result, depreciation for the current year was materially lowered.
4. A retail outlet changed its computation for bad debt expense from 1% to ½ of 1% of receivables because of changes in its customer clientele.
5. A mining concern sells a foreign subsidiary engaged in uranium mining, although it (the seller) continues to engage in uranium mining in other countries.
6. A steel company changes from the average-cost method to the FIFO method for inventory costing purposes.
7. A construction company, at great expense, prepared a major proposal for a government loan. The loan is not approved.
8. A water pump manufacturer has had large losses resulting from a strike by its employees early in the year.
9. Depreciation for a prior period was incorrectly understated by $950,000. The error was discovered in the current year.
10. A large sheep rancher suffered a major loss because the state required that all sheep in the state be killed to halt the spread of a rare disease. Such a situation has not occurred in the state for 20 years.
11. A food distributor that sells wholesale to supermarket chains and to fast-food restaurants (two distinguishable classes of customers) decides to discontinue the division that sells to one of the two classes of customers. This represents a strategic shift in the company business.

Instructions

From the foregoing information, indicate in what section of the income statement or retained earnings statement these items should be classified. Provide a brief rationale for your position.

CT3.7 (LO 2) (Comprehensive Income) Willie Nelson, Jr., controller for Jenkins Corporation, is preparing the company's financial statements at year-end. Currently, he is focusing on the income statement and determining the format for reporting comprehensive income. During the year, the company earned net income of $400,000 and had unrealized gains on available-for-sale debt securities of $15,000. In the previous year, net income was $410,000, and the company had no unrealized gains or losses.

Instructions

a. Show how income and comprehensive income will be reported on a comparative basis for the current and prior years, using the two statement format.

b. Show how income and comprehensive income will be reported on a comparative basis for the current and prior years, using the one statement format.

c. Which format should Nelson recommend?

FASB Codification References

[1] FASB ASC 225-20-45-4. [Predecessor literature: "Reporting the Results of Operations," *Opinions of the Accounting Principles Board No. 30* (New York: AICPA, 1973), par. 23, as amended by "Accounting for the Impairment or Disposal of Long-lived Assets," *Statement of Financial Accounting Standards No. 144* (Norwalk, Conn.: FASB, 2001).]
[2] FASB ASC 260. [Predecessor literature: "Earnings Per Share," *Statement of Financial Accounting Standards No. 128* (Norwalk, Conn.: FASB, 1996).]
[3] FASB ASC 224-20-45-2. [Predecessor literature: "Reporting the Results of Operations," *Opinions of the Accounting Principles Board No. 30* (New York: AICPA, 1973), par. 20.]
[4] FASB ASC 205-20-45. [Predecessor literature: "Accounting for the Impairment or Disposal of Long-lived Assets," *Statement of Financial Accounting Standards No. 144* (Norwalk, Conn.: FASB, 2001), par. 4.]
[5] FASB ASC 220. [Predecessor literature: "Reporting Comprehensive Income," *Statement of Financial Accounting Standards No. 130* (Norwalk, Conn.: FASB, 1997).]
[6] FASB ASC 606. [Predecessor literature: None]
[7] FASB ASC 250. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Norwalk, Conn.: FASB, 2005).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE3.1 Access the glossary ("Master Glossary") to answer the following.

a. What is a change in accounting estimate?

b. How is a change in accounting principle distinguished from a "change in accounting estimate effected by a change in accounting principle"?

c. What is the formal definition of comprehensive income?

CE3.2 Enyart Company has a noncontrolling interest in a subsidiary. Enyart's controller is unsure how to report losses in the subsidiary that exceed the value of Enyart's interest in the subsidiary. Advise the controller.

CE3.3 What guidance does the SEC provide for public companies with respect to the reporting of the "effect of preferred stock dividends and accretion of carrying amount of preferred stock on earnings per share"?

Codification Research Case

Your client took accounting a number of years ago and was unaware of comprehensive income reporting. He is not convinced that any accounting standards exist for comprehensive income.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. What authoritative literature addresses comprehensive income? When was it issued?

b. Provide the definition of comprehensive income.

c. Define classifications within net income and give examples.

d. Define classifications within other comprehensive income and give examples.

e. What are reclassification adjustments?

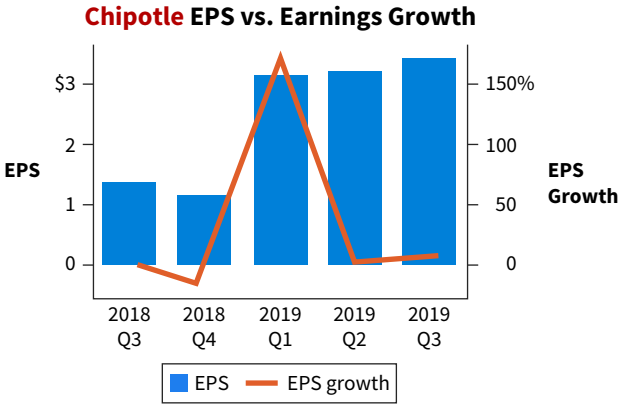
Additional Professional Resources

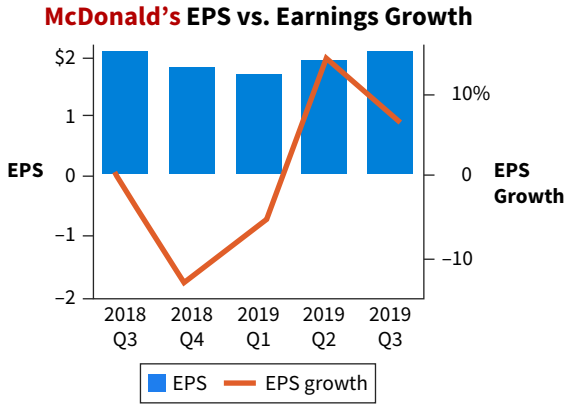
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Analyze Trends

DA3.1 Data visualizations can often help us see data in a different way as well as explain trends that may not be so apparent when looking at a set of financial statements. For example, consider the following graphs. These graphs compare earnings trends for **Chipotle** and **McDonald's**, and provide a visual of the relationship between earnings per share and the quarterly growth in earnings.





Required

For this exercise, you will use visualizations of earnings and stock price data from Chipotle and McDonald's to track trends in these metrics.

Go to Wiley Course Resources for complete details and instructions.

DA3.2 Data visualizations can also be used to help management understand how the market may respond to reported financial data.

Required

Using the same visualization dashboard from DA3.1, you will provide a summary to management as to why you think **Chipotle**'s stock price fell despite an increase in earnings per share.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics for Investment Decisions

Excel

DA3.3 Deciding whether a public company is worthy of your investment takes a good amount of analysis. With the amount of financial data available to the investing public, we can make good use of tools like Excel to organize and evaluate the data.

Required

For this exercise, you will pull data from a public company's 10-K filing and prepare a thorough ratio analysis in Excel for both the current and prior period. You will evaluate each ratio individually and then evaluate the potential investment as a whole. You will then write a memo detailing whether you would pursue an investment in this company.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 7

Compare the accounting procedures for income reporting under GAAP and IFRS.

As in GAAP, the income statement is a required statement for IFRS. In addition, the content and presentation of an IFRS income statement is similar to the one used for GAAP. *IAS 1,* "Presentation of Financial Statements," provides general guidelines for the reporting of income statement information. Subsequently, a number of international standards have been issued that provide additional guidance to issues related to income statement presentation. Following are the key similarities and differences between GAAP and IFRS related to the income statement.

Similarities

- Both GAAP and IFRS require companies to indicate the amount of net income attributable to noncontrolling interest.
- Under both IFRS and GAAP, unusual and infrequent income items are reported in Income before income taxes.
- Both GAAP and IFRS follow the same presentation guidelines for discontinued operations, but IFRS defines a discontinued operation more narrowly. Both standard-setters have indicated a willingness to develop a similar definition to be used in the joint project on financial statement presentation.
- Both GAAP and IFRS have items that are recognized in equity as part of comprehensive income but do not affect net income. Both GAAP and IFRS allow a one statement or two statement approach to preparing the statement of comprehensive income.

Differences

- Presentation of the income statement under GAAP follows either a single-step or multiple-step format. IFRS does not mention a single-step or multiple-step approach.
- Under IFRS, companies must classify expenses by either nature or function. GAAP does not have that requirement, but the SEC requires a functional presentation.
- IFRS identifies certain minimum items that should be presented on the income statement. GAAP has no minimum information requirements. However, the SEC rules have more rigorous presentation requirements.
- IFRS does not define key measures like income from operations. SEC regulations define many key measures and provide requirements and limitations on companies reporting non-GAAP/IFRS information.
- Under IFRS, revaluation of property, plant, and equipment, and intangible assets is permitted, with gains reported as other comprehensive income. The effect of this difference is that application of IFRS results in more transactions affecting equity but not net income.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 4

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Balance Sheet and Statement of Cash Flows

WHAT are the balance sheet and statement of cash flows?

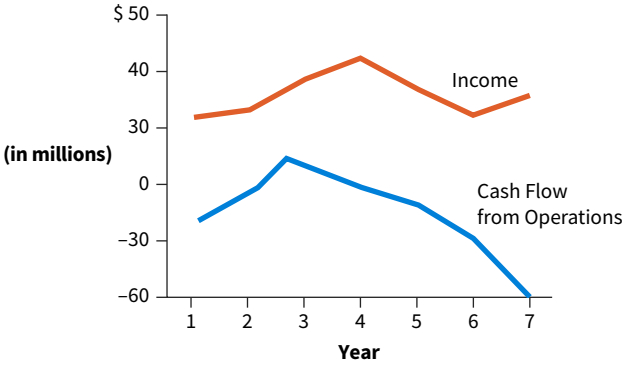
As you learned in Chapter 1, the balance sheet and the statement of cash flows are two of the primary financial statements. The balance sheet (also referred to as the statement of financial position) reports the assets, liabilities, and stockholders' equity of a company at a specific date. The statement of cash flows reports cash flow from (1) operations, (2) investing transactions, and (3) financing transactions, thereby explaining the net increase or decrease in cash during the period.

WHY is information reported in the balance sheet and statement of cash flows important to investors and creditors?

The objective of financial reporting calls for reporting information that helps in predicting the amounts, timing, and uncertainty of future cash flows. Information in the balance sheet is directly related to that goal, as assets represent future cash inflows and liabilities reflect future cash outflows. Information in the balance sheet also provides signals on the quality of income.

For example, consider **Krispy Kreme Doughnuts**, which not long ago had a 60% earnings per share growth rate and a price-earnings ratio around 70. Seven months later, its stock price had dropped 72%. What happened? Stockholders alleged that Krispy Kreme may have been inflating its revenues and not taking enough bad debt expense (which inflated both assets and income). In addition, Krispy Kreme's operating cash flow was negative. Most financially sound companies generate positive cash flow. Information in the balance sheet could have provided investors an early warning signal of Krispy Kreme's financial challenges.

W.T. Grant's Financial Performance



A classic case of the importance of information in the cash flow statement was the bankruptcy of **W.T. Grant**. As shown in the graph, W. T. Grant's cash flow began to "go south" starting in about year 3; the company filed for bankruptcy shortly after year 7. Financial statement readers who studied the company's cash flows, as reported in the statement of cash flows, would have found early warnings of its problems.

HOW are these statements prepared?

The balance sheet is prepared at a point in time and reports all asset, liability, and stockholders' equity balances. Companies generally prepare a classified balance sheet, grouping assets and liabilities as either current or long-term according to whether the assets or the liabilities will be received or paid within the next year. The cash flow statement is prepared with information from the income statement and changes in balance sheet accounts to present the sources and uses of cash as operating, investing, and financing activities.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 4.1 Explain the uses, limitations, and content of the balance sheet.	**4.1 Balance Sheet** • Usefulness of the balance sheet • Limitations of the balance sheet • Classification in the balance sheet • Format of the balance sheet	Put It into Practice LO 4.1 **Prepare a Balance Sheet**
LO 4.2 Explain the purpose, content, preparation, and usefulness of the statement of cash flows.	**4.2 Statement of Cash Flows** • Purpose of the statement of cash flows • Content of the statement of cash flows • Preparation of the statement of cash flows • Usefulness of the statement of cash flows	Put It into Practice LO 4.2 **Prepare a Statement of Cash Flows**

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

4.1 Balance Sheet

LEARNING OBJECTIVE 1

Explain the uses, limitations, and content of the balance sheet.

The **balance sheet**, sometimes referred to as the **statement of financial position**, reports the assets, liabilities, and stockholders' equity of a business enterprise at a specific date. The balance sheet is useful because it:

- Provides information about the nature and amounts of investments in enterprise resources, obligations to creditors, and the owners' equity in net resources.
- Helps in predicting the amounts, timing, and uncertainty of future cash flows.

Usefulness of the Balance Sheet

By reporting information on assets, liabilities, and stockholders' equity, the balance sheet provides a basis for computing rates of return and evaluating the capital structure of the company. Analysts also use information in the balance sheet to assess a company's risk[1] and future cash flows. In this regard, analysts use the balance sheet to assess a company's liquidity, solvency, and financial flexibility, as shown in **Illustration 4.1**.

[1]Risk conveys the unpredictability of future events, transactions, circumstances, and results of the company.

ILLUSTRATION 4.1 Assessing a Company's Liquidity, Solvency, and Financial Flexibility

Liquidity

How quickly will my assets convert to cash?

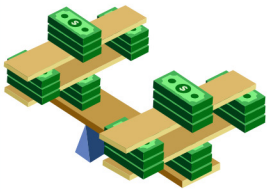
Liquidity describes "the amount of time that is expected to elapse until an asset is realized or otherwise converted into cash or until a liability has to be paid."[2] Creditors are interested in short-term liquidity ratios, such as the ratio of cash (or near cash) to short-term liabilities, and which ratios indicate whether a company will have the resources to pay its current and maturing obligations. Stockholders assess liquidity to evaluate the possibility of future cash dividends or the buyback of shares. In general, the greater a company's liquidity, the lower its risk of failure.

Solvency

We are drowning in a sea of debt!

Solvency refers to the ability of a company to pay its debts as they mature. For example, when a company carries a high level of long-term debt relative to assets, it has lower solvency than a similar company with a low level of long-term debt. Companies with higher debt are relatively more risky because they will need more of their assets to meet their fixed obligations (interest and principal payments).

Financial Flexibility



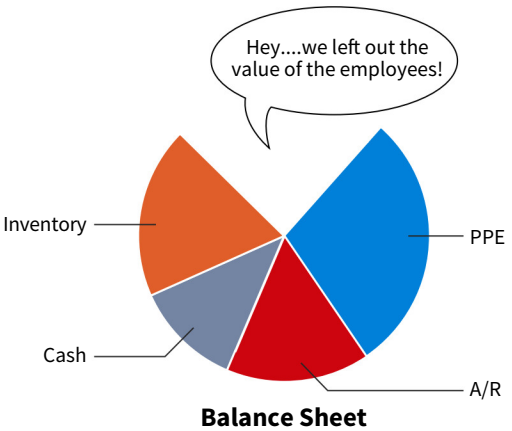
Hmm... I wonder if they will pay me back?

Liquidity and solvency affect a company's **financial flexibility**, which measures the "ability of an enterprise to take effective actions to alter the amounts and timing of cash flows so it can respond to unexpected needs and opportunities." For example, a company may become so loaded with debt—so financially inflexible—that it has little or no sources of cash to finance expansion or to pay off maturing debt. A company with a high degree of financial flexibility is better able to survive bad times, to recover from unexpected setbacks, and to take advantage of profitable and unexpected investment opportunities. Generally, the greater a company's financial flexibility, the lower its risk of failure.

Limitations of the Balance Sheet

Some of the major limitations of the balance sheet are as follows.

1. **Most assets and liabilities are reported at historical cost**. As a result, the information provided in the balance sheet is often criticized for not reporting a more relevant fair value. For example, **Amazon** reports $31.7 billion of land and buildings on its balance sheet that may have appreciated in value after purchase. Yet, Amazon reports any increase in value only if and when it sells these assets.
2. **Companies use judgments and estimates to determine many of the items reported in the balance sheet**. For example, in its balance sheet, **Dell** estimates that $94 million of its accounts receivable balance will be uncollectible, that computer equipment should be depreciated over 3–5 years, and that its warranty obligation is a liability of $341 million. These judgments and estimates have a material impact on Dell's financial reports.



3. **The balance sheet necessarily omits many items that are of financial value but that a company cannot record objectively**. For example, the knowledge and skill of **Intel** employees in developing new computer chips are arguably the company's most significant assets. However, because Intel cannot reliably measure the value of its employees and other intangible assets (such as customer base, research superiority, and reputation), it does not recognize these items in the balance sheet. Similarly, many liabilities are reported in an "off-balance-sheet" manner, if at all. For example, **Apple** disclosed $8.2 million of off-balance-sheet, noncancelable purchase obligations in the notes to its financial statements.

[2]"Reporting Income, Cash Flows, and Financial Position of Business Enterprises," *Proposed Statement of Financial Accounting Concepts* (Stamford, Conn.: FASB, 1981), par. 29.

Accounting Matters — Stuck in Port

The strength of a company's balance sheet can have a significant impact on its ability to navigate a crisis. During the Covid-19 global pandemic, the cruise industry effectively shut down. With no revenue coming in, companies were burning through staggering amounts of cash, upward of $650 million per month for **Carnival Corporation**.

However, the company's strong financial position helped it to navigate the shutdown, with company executives noting to Wall Street analysts that it had $7.6 billion in liquidity early in the pandemic. Carnival president and CEO, Arnold Donald, told analysts: "Additional cash conservation efforts, combined with future liquidity measures, will enable us to sustain ourselves beyond 12 months into late [2021], even in a zero-revenue scenario."

Another cruise operator, **Royal Caribbean**, noted that the strength of its balance sheet, assets, and brands allowed it to raise upward of $6.5 billion in new liquidity since the start of the pandemic. While the operations of cruise lines look very different (and more efficient) once the ships finally set sail post-pandemic, it is clear that a strong balance sheet and financial flexibility were critical to survival.

Source: Gene Sloan, "Why Your Favorite Cruise Line Probably Isn't Going Out of Business, Despite the COVID Shutdown," *the pointsguy.com* (September 3, 2020).

Classification in the Balance Sheet

Balance sheet accounts are **classified**. That is, balance sheets group together similar items to arrive at significant subtotals. Furthermore, the material is arranged so that important relationships are shown.

The FASB has often noted that the parts and subsections of financial statements can be more informative than the whole. Therefore, the FASB discourages the reporting of summary accounts alone (such as total assets, net assets, and total liabilities). Instead, companies should report and classify individual items in sufficient detail to permit users to assess the amounts, timing, and uncertainty of future cash flows. For example, classifying accounts payable as a current liability indicates that the company must liquidate that payable in the next year or accounting cycle. Such classifications make it easier for users to evaluate the company's liquidity, solvency, financial flexibility, profitability, and risk.

To classify items in financial statements, companies group those items with similar characteristics and separate items with different characteristics. For example, companies should report separately:

1. **Assets that differ in their type or expected function in the company's central operations or other activities**. For example, merchandise inventories should be reported separately from property, plant, and equipment.
2. **Assets and liabilities with different implications for the company's financial flexibility**. For example, a company that uses assets in its operations like manufacturing equipment should report those assets separately from assets held for investment and assets subject to restrictions, such as leased equipment.
3. **Assets and liabilities with different general liquidity characteristics**. For example, cash should be reported separately from inventories.

The three general classes of items included in the balance sheet are assets, liabilities, and equity. We defined them in Chapter 1 as follows.

Elements of the Balance Sheet

1. Assets. Probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.

2. Liabilities. Probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.

3. Equity. Residual interest in the assets of an entity that remains after deducting its liabilities. In a business enterprise, the equity is the ownership interest.

Companies then further divide these items into several subclassifications. Illustration 4.2 indicates the general format of balance sheet presentation.

ILLUSTRATION 4.2 Balance Sheet Classifications

Assets	Liabilities and Owners' Equity
Current assets	Current liabilities
Long-term investments	Long-term debt
Property, plant, and equipment	Owners' (stockholders') equity
Right-of-use assets	
Intangible assets	
Other assets	

A company may classify the balance sheet in some other manner, but in practice you usually see little departure from these major subdivisions. A proprietorship or partnership presents the classifications within the owners' equity section a little differently, as we will show later in the chapter.

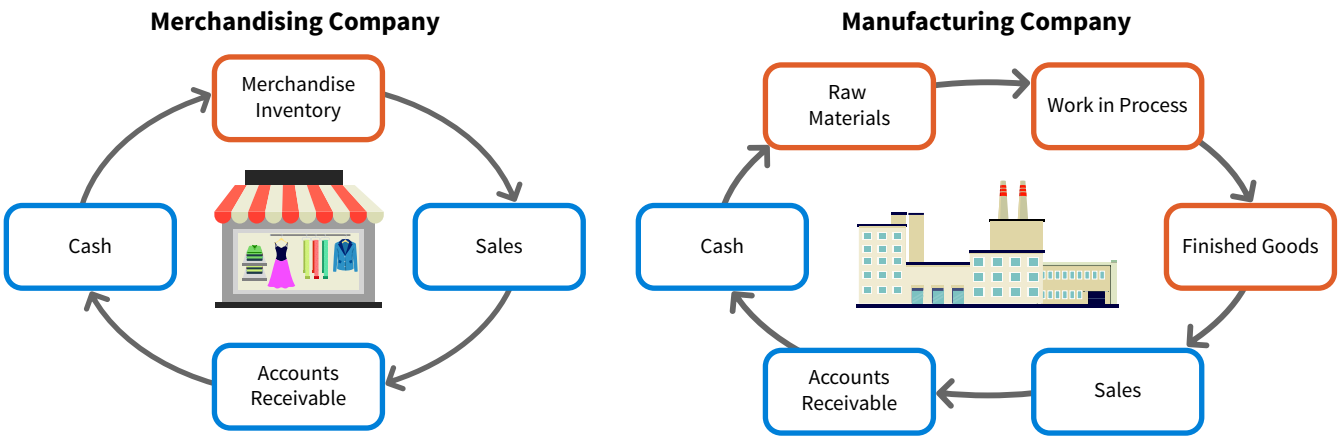
Current Assets

Current assets are cash and other assets a company expects to convert into cash, sell, or consume either in one year or in the operating cycle, whichever is longer.

- The operating cycle is the average time between when a company acquires materials and supplies and when it receives cash for sales of the product (for which it acquired the materials and supplies).
- The cycle operates from cash through inventory, production, receivables, and back to cash.

Illustration 4.3 shows the operating cycles for merchandising and manufacturing companies.

ILLUSTRATION 4.3 Operating Cycles



When several operating cycles occur within one year (which is generally the case for service and merchandising companies), a company uses the one-year period. If the operating cycle is more than one year, a company uses the longer period. Although an operating cycle longer than a year is not common, the tobacco, distillery, lumber, and shipbuilding industries have operating cycles longer than one year.

Current assets are presented in the balance sheet in order of liquidity. The five major items found in the current assets section, and their bases of valuation, are shown in Illustration 4.4.

Item	Basis of Valuation
Cash and cash equivalents	Fair value
Short-term investments	Generally, fair value
Receivables	Estimated amount collectible
Inventories	Lower-of-cost-or-net realizable value/market
Prepaid expenses	Cost

ILLUSTRATION 4.4 Current Assets and Basis of Valuation

A company does not report these five items as current assets if it does not expect to realize them in one year or in the operating cycle, whichever is longer. For example, a company excludes from the current assets section cash restricted for purposes other than payment of current obligations or for use in current operations. **Generally, if a company expects to convert an asset into cash or to use it to pay a current liability within a year or the operating cycle, whichever is longer, it classifies the asset as current.**

Cash Most companies use the caption "Cash and cash equivalents" on their balance sheet. What types of items are included in "cash and cash equivalents"?

- **Cash:** currency and demand deposits at a financial institution. Examples of demand deposits are checking, savings, and money market accounts.
- **Cash equivalents:** short-term, highly liquid investments that will mature within three months or less. One such example is a certificate of deposit (CD). If a company invests funds into a three-month CD, those funds would be included in the cash and cash equivalents line item on the balance sheet.

These items are reported at approximate fair value on the balance sheet.

A company must disclose any restrictions or commitments related to the availability of cash. Additionally, if a company restricts cash for purposes other than current obligations, it excludes the cash from current assets. Illustration 4.5 shows an example of this, from the annual report of **The Walt Disney Company**.

The Walt Disney Company
(in millions)

Current assets	
Cash and cash equivalents	$5,418
Other current assets	979
Other assets	4,715

Note 2 (in part): Cash and cash equivalents consist of cash on hand and marketable securities with original maturities of three months or less. Cash and cash equivalents subject to contractual restrictions and not readily available are classified as restricted cash. The Company's restricted cash balances are primarily made up of cash held as collateral for certain derivative instruments.

Cash and cash equivalents	$5,418
Restricted cash included in:	
Other current assets	26
Other assets	11
Total cash, cash equivalents and restricted cash in the statement of cash flows	$5,455

ILLUSTRATION 4.5 Balance Sheet Presentation of Current and Noncurrent Restricted Cash

Short-Term Investments If a company has excess cash on hand, it may choose to invest that cash in stocks or bonds of other companies. The investments may be held for a short period of time or for many years. We will cover accounting for investments later in the text,

but here is an overview and introduction to investments terminology. [1] (See the FASB Codification References near the end of the chapter.)

1. **Equity securities**: investments in preferred and common stock of other companies. A company can buy the stock and sell it quickly if the stock price increases, or it can hold the stock for many years. If the entity intends to sell the stock in a short period of time, say less than a year, it is classified as a short-term investment. Equity securities are generally recorded at fair value.
2. **Debt securities**: investments in bonds or notes of other companies or governmental entities. Debt investments are further separated into three portfolios for valuation and reporting purposes as follows.
   a. **Held-to-maturity**: debt securities that a company intends to hold until maturity. These are reported as current or noncurrent assets depending on the time left until maturity. Held-to-maturity debt investments are reported on the balance sheet at "amortized cost," which is covered in Chapter 16.
   b. **Trading**: debt securities bought and held primarily for sale in the near future to generate a return. These are reported as current assets at their fair value.
   c. **Available-for-sale**: debt securities not classified as held-to-maturity or trading securities. These are reported at fair value as current or noncurrent assets depending on the length of time management intends to hold the investment.[3]

Illustration 4.6 shows an excerpt from the annual report of **CVS Health Corporation** with respect to its investments.

ILLUSTRATION 4.6 Balance Sheet Presentation of Investments in Securities

CVS Health Corporation
(in millions)

Assets

Cash and cash equivalents	$5,683
Short-term investments	2,373

Note 1 Accounting Policies (in part):
Debt securities consist primarily of U.S. Treasury and agency securities, mortgage-backed securities, corporate and foreign bonds and other debt securities. Debt securities are classified as either current or long-term investments based on their contractual maturities unless the company intends to sell an investment within the next twelve months, in which case it is classified as current on the consolidated balance sheets. Debt securities are classified as available for sale and are carried at fair value.

Note 3 Investments (in part):

In millions	Current
Debt securities available for sale	$2,251
Mortgage loans	122
Total current investments	$2,373

Receivables Current receivables may be grouped as one item on the balance sheet and be shown "net" of any expected loss due to uncollectible amounts. A breakdown of major categories of receivables is typically provided in the related notes. For receivables arising from unusual transactions, such as sale of property or a loan to employees, companies should separately classify these as long-term unless collection is expected within one year.

[3]Under the fair value option, companies may elect to use fair value as the measurement basis for selected financial assets and liabilities. For these companies, some of their financial assets (and liabilities) may be recorded at historical cost, while others are recorded at fair value. [2]

Stanley Black & Decker reported its receivables as shown in **Illustration 4.7**.

Stanley Black & Decker
(in millions)

Current assets

Cash and cash equivalents	$ 297.7
Accounts and notes receivable, net	1,454.6
Inventories, net	2,255.0
Prepaid expenses	395.4
Other current assets	53.9
Total current assets	$4,456.6

Note B (in part): Accounts and Notes Receivable

Trade accounts receivable	$1,284.0
Trade notes receivable	156.7
Other accounts receivables	126.3
Gross accounts and notes receivable	1,567.0
Allowance for doubtful accounts	(112.4)
Accounts and notes receivable, net	$1,454.6

ILLUSTRATION 4.7 Balance Sheet Presentation of Current Assets

Inventories To present inventories properly, a company discloses the basis of valuation (e.g., lower-of-cost-or-net realizable value or lower-of-cost-or-market) and the cost flow assumption used (e.g., FIFO or LIFO). A manufacturing company, like **Stanley Black & Decker** shown in **Illustration 4.8**, also indicates the stage of completion of the inventories in the notes to its financial statements.

Stanley Black & Decker

Note C (in part): Inventories

Finished products	$1,526.0
Work in process	162.0
Raw materials	567.0
Total	2,255.0

Note A (in part): Inventories

U.S. inventories are primarily valued at the lower of Last-In-First-Out ("LIFO") cost or market because the Company believes it results in better matching of costs and revenues.

ILLUSTRATION 4.8 Note Disclosure of Inventories

Prepaid Expenses A company includes prepaid expenses in current assets if it will receive benefits (usually services) within one year or the operating cycle, whichever is longer. As we discussed earlier, these items are current assets because if they had not already been paid, they would require the use of cash during the next year or the operating cycle. A company reports prepaid expenses at the amount of the unexpired or unconsumed cost.

A common example is the prepayment for an insurance policy. A company classifies it as a prepaid expense because the payment precedes the receipt of the benefit of coverage. Other common prepaid expenses include prepaid rent, advertising, taxes, and office or operating supplies. See Illustration 4.7 to see how Stanley Black & Decker displays its prepaid expenses within the current assets section of its balance sheet.

Analytics in Action Working Capital and Analytics?

Companies have access to more data now than ever before, and there are increasingly more tools available to help managers evaluate those data to help make business decisions. Granular data on inventory, including how many days each type of inventory will last, is necessary to effectively manage inventory levels. Without data on how much is spent with each supplier, managers cannot negotiate volume discounts.

Collecting data on the timeliness of issuing sales invoices after services are provided will highlight any consistent delays; you cannot expect to receive payment from your customers until you invoice them. Managing working capital with data can provide a lifeline to companies who are struggling, and a significant competitive advantage to healthy companies by allowing them to use the newfound resources to invest in more value creation. One natural-resources company reduced its working capital by more than 40% in the space of a year, worth almost $1.5 billion!

Source: Michael Birshan, Matt Stone, and Michael Park, "Transforming the Culture of Managing Working Capital," McKinsey & Company (January 4, 2018).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Noncurrent Assets

Noncurrent assets are those not meeting the definition of current assets. They include a variety of items, as we discuss in the following sections.

Long-Term Investments

Long-term investments, often referred to simply as investments, normally consist of one of four types.

1. Investments in debt and equity securities.
2. Investments in tangible fixed assets not currently used in operations, such as land held for speculation.
3. Investments set aside in special funds, such as a sinking fund, pension fund, or plant expansion fund. This includes the cash surrender value of life insurance.
4. Investments in nonconsolidated subsidiaries or affiliated companies.

Companies usually present long-term investments on the balance sheet just below "Current assets," in a separate section called "Investments." Realize that many securities classified as long-term investments are, in fact, readily marketable. But a company does not include them as current assets unless it **intends to convert them to cash in the short-term**—that is, within a year or in the operating cycle, whichever is longer.

Illustration 4.6 showed how CVS reported its short-term investments; that same disclosure also detailed its long-term investments. On the balance sheet, CVS reported investments after the current asset subtotal and before the "Property, plant and equipment" section. as shown in **Illustration 4.9**.

ILLUSTRATION 4.9 Balance Sheet Presentation of Long-Term Investments

CVS Health Corporation
(in millions)

Assets

Total current assets	$50,302
Long-term investments	17,314

Note 3 Investments (in part):

	Long-term
Debt securities available for sale	$14,671
Mortgage loans	1,091
Other investments	1,552
Total investments	$17,314

Property, Plant, and Equipment **Property, plant, and equipment** are tangible long-lived assets used in the regular operations of the business. These assets consist of physical property such as land, buildings, machinery, furniture, tools, right-of-use assets (leased assets), and wasting resources (timberland, minerals). The right-of-use asset results from leasing arrangements and can be significant for many companies, as most lease arrangements are recorded on the balance sheet. With the exception of land, a company either depreciates (e.g., buildings) or depletes (e.g., timberlands or oil reserves) these assets.

Mattel, Inc. presented its property, plant, and equipment in its balance sheet as shown in **Illustration 4.10**. A company discloses the basis it uses to value property, plant, and equipment; any liens, or claims, against the properties; and accumulated depreciation—usually in the notes to the financial statements.

Mattel Inc.

Property, plant, and equipment, net	$ 550,139
Right-of-use assets, net	303,187
Goodwill	1,390,714
Other noncurrent assets	833,212
	$3,077,252

Note 2: Property, plant, and equipment, net includes the following:

Land	$ 25,112
Buildings	302,956
Machinery and equipment	812,509
Software	364,391
Tools, dies, and molds	747,706
Leasehold improvements	183,250
	2,435,924
Less: Accumulated depreciation	1,885,785
Total property, plant, and equipment, net	$ 550,139

ILLUSTRATION 4.10 Balance Sheet Presentation of Property, Plant, and Equipment

Intangible Assets **Intangible assets** lack physical substance and are not financial instruments (see the "Fair Values" section in Appendix 4A for the definition of a financial instrument). Intangible assets include patents, copyrights, franchises, goodwill, trademarks, trade names, and customer lists. A company writes off (amortizes) limited-life intangible assets over their useful lives. It periodically assesses indefinite-life intangibles (such as goodwill) for impairment. Intangible assets can represent significant economic resources, yet financial analysts often ignore them, because valuation is difficult.

PepsiCo, Inc. reported intangible assets in its balance sheet as shown in **Illustration 4.11**.

PepsiCo, Inc.
(in millions)

Intangible assets	
Amortizable Intangible Assets, net	$ 1,433
Goodwill	15,501
Other indefinite-lived intangible assets	14,610
Total intangible assets	31,544

ILLUSTRATION 4.11 Balance Sheet Presentation of Intangible Assets

You should recognize that a company like PepsiCo spends considerable sums (more than 1% of sales) on research and development costs, which may lead to the development of patents or copyrights. However, due to the difficulty of associating these expenditures with possible intangible assets in the future, these costs are expensed as incurred.

Accounting Matters — Cryptocurrency: Is It Cash?

You may have heard of cryptocurrency, like Bitcoin. Some of you may have even invested in cryptocurrency. But what exactly is it, and how should companies report it on their balance sheet?

Cryptocurrency is a type of digital asset that uses an encryption to secure and verify transactions. It is designed to work independent of a financial institution. Cryptocurrencies can be used to pay for goods and services, though they are not backed by any government, nor is the supply managed by a central bank.

So, how do we report cryptocurrencies? Is it cash, inventory, or financial instrument? While GAAP does not explicitly cover accounting for cryptocurrencies (yet), these assets are most often accounted for as indefinite-life intangible assets, given that they lack physical substance but do not meet the definition of a financial instrument. As the use of cryptocurrencies continues to evolve, additional accounting challenges will emerge. To support continued innovation in this area, GAAP will need to evolve as well.

Other Assets The items included in the section "Other assets" vary widely in practice. Some include items such as long-term prepaid expenses, prepaid pension cost, and noncurrent receivables. Other items that might be included are assets in special funds, deferred income taxes, property held for sale, and restricted cash or securities. A company should limit this section to include only unusual items sufficiently different from assets included in specific categories.

Liabilities

Similar to assets, companies classify liabilities as current or long-term.

Current Liabilities **Current liabilities** are the obligations that a company reasonably expects to settle, or pay off, either through the use of current assets or the creation of other current liabilities. This concept includes:

1. Payables resulting from the acquisition of goods and services, such as accounts payable, wages payable, taxes payable, and so on.
2. Collections received in advance for the delivery of goods or performance of services, such as unearned rent revenue or unearned subscriptions revenue.
3. Other liabilities whose settlement will take place within the operating cycle, such as the portion of long-term bonds to be paid in the current period, referred to as the current maturity of long-term debt, or short-term obligations arising from the purchase of equipment.

At times, a liability that is payable within the next year is not included in the current liabilities section. This occurs either when the company has executed a contractual agreement to refinance the debt through another long-term issue [3] or to retire the debt out of noncurrent assets. This approach is used because settlement does not result from the use of current assets or the creation of other current liabilities.

Companies do not report current liabilities in any consistent order. In general, though, companies most commonly list notes payable, accounts payable, or short-term debt as the first item. Income taxes payable, current maturities of long-term debt, or other current liabilities are commonly listed last. For example, see **Starbucks Corporation**'s current liabilities section in **Illustration 4.12**.

ILLUSTRATION 4.12 Balance Sheet Presentation of Current Liabilities

Starbucks Corporation
(in millions)

Current liabilities	
Accounts payable	$1,179.3
Accrued liabilities	1,752.5
Accrued payroll and benefits	656.8
Income taxes payable	102.8
Stored value card liability and current portion of deferred revenue	1,642.9
Current portion of long-term debt	349.9
Total current liabilities	5,684.2

Previously, we discussed the importance of analyzing a company's liquidity. One way to assess liquidity is to calculate a company's working capital.

- **Working capital** is simply total current assets minus total current liabilities.
- As such, working capital represents the net amount of a company's relatively liquid resources.

Of course, the hope is that working capital is a positive number, meaning current assets are more than current liabilities. Companies seldom disclose on the balance sheet an amount for working capital, but bankers and other creditors compute it as an indicator of the short-run liquidity of a company.

Accounting Matters — When Do I Get Paid?

A key indicator of financial flexibility is a company's working capital, or the relationship between its current assets and current liabilities. Even before the Covid-19 global pandemic, U.S. public companies were delaying payments to their suppliers, holding back payments for an average of 56.7 days, far longer than the industry standard of 30 days.

Why the delay? The longer companies wait to pay their suppliers, the more cash they have on hand to direct to other areas. For example, **Stanley Black & Decker** made its suppliers wait an average of 83 days in 2018, thereby unlocking nearly $500 million from its working capital since 2005. But what about the suppliers? One company's working capital gain is another company's loss.

In 2020, when many retailers were struggling, some companies unilaterally extended payment terms to their vendors. **Macy's** told its vendors to expect payment in 120 days, and **Kohl's** extended its payment out to 180 days. Some larger suppliers were able to weather these longer payment terms. But some smaller suppliers, or those with limited financial flexibility, were irreparably harmed.

Sources: Tatyana Shumsky and Nina Trentmann, "Delaying Payments to Suppliers Helps Companies Unlock Cash," *Wall Street Journal* (June 28, 2018); and Warren Shoulberg, "Kohl's, Macy's, Gap, Belk Are Among the Retailers Delaying Payments to Their Suppliers," *Forbes* (April 27, 2020).

Long-Term Liabilities

Long-term liabilities are obligations that a company does not reasonably expect to settle within the normal operating cycle. Instead, it expects to pay them at some date beyond that time. The most common examples are bonds payable, notes payable, deferred income tax liabilities, lease obligations, and pension obligations. **Companies classify long-term liabilities that mature within the current operating cycle as current liabilities if payment of the obligation requires the use of current assets.**

Generally, long-term liabilities are of three types.

1. Obligations arising from specific financing situations, such as the issuance of bonds, long-term lease obligations, and long-term notes payable.
2. Obligations arising from the ordinary operations of the company, such as pension obligations and deferred income tax liabilities.
3. Obligations that depend on the occurrence or nonoccurrence of one or more future events to confirm the amount payable, the payee, or the date payable, such as service or product warranties.

Companies generally provide a great deal of supplementary disclosure for long-term liabilities because most long-term debt is subject to various covenants and restrictions for the protection of lenders.[4]

Companies frequently describe the terms of all long-term liability agreements in notes to the financial statements. The description includes the maturity date or dates, rates of interest, nature of the obligation, and any collateral pledged to support the debt. **Illustration 4.13** provides an example of this, taken from an excerpt from **Verizon Wireless**'s financials.

[4]Companies usually explain the pertinent rights and privileges of the various securities (both debt and equity) outstanding in the notes to the financial statements. Examples of information that companies should disclose are dividend and liquidation preferences, participation rights, call prices and dates, conversion or exercise prices or rates and pertinent dates, sinking fund requirements, unusual voting rights, and significant terms of contracts to issue additional shares. **[4]**

ILLUSTRATION 4.13 Balance Sheet Presentation of Long-Term Debt

Verizon Wireless
(dollars in millions)

Total current liabilities	$ 44,868
Long-term debt	100,712
Employee benefit obligations	17,952
Deferred income taxes	34,703
Non-current operating lease liabilities	18,393
Other liabilities	12,264
Total long-term liabilities	184,024

Note 7. Debt: Outstanding long-term debt obligations:

At December 31	Interest Rates %	
Verizon Communications	1.38 – 8.95	$ 101,699
Alltel Corporation	6.80 – 7.88	96
Operating telephone subsidiary debentures	5.13 – 8.75	766
GTE LLC	6.94 - 8.75	391
Other subsidiaries—asset-backed debt	1.42 – 3.56	12,393
Finance lease obligations (average rate of 3.2%)		1,116
Unamortized discount, net of premium		(4,480)
Unamortized debt issuance costs		(492)
Total long-term debt, including current maturities		111,489
Less long-term debt maturing within one year		10,777
Total long-term debt		$ 100,712

Owners' Equity

The **owners' equity (stockholders' equity)** section is one of the most difficult sections to prepare and understand. This is due to the complexity of capital stock agreements and the various restrictions on stockholders' equity imposed by state corporation laws, liability agreements, and boards of directors. Companies usually divide the section into five parts, as the following indicates.

Elements of Owners' Equity

1. Capital stock. The total par or stated value of the shares issued. Companies must disclose the par value per share and the authorized, issued, and outstanding share amounts for common and preferred stock.

2. Additional paid-in capital. The excess of amounts paid in over the par or stated value.

3. Retained earnings. The corporation's accumulated, undistributed earnings. It may be divided into two parts:

a. Unappropriated: the amount usually available for dividend distribution.

b. Restricted: the amount restricted by bond indentures or other loan agreements.

4. Accumulated other comprehensive income. The aggregate amount of the other comprehensive income items, such as unrealized gains and losses on certain investments.

5. Treasury stock. Generally, the cost of shares repurchased by the company. This amount is a reduction of stockholders' equity.

Illustration 4.14 presents an example of the stockholders' equity section from **General Mills, Inc.**

General Mills, Inc.
(in millions)

Stockholders' equity:	
Common stock, 754.6 shares issued, $.10 par value	$ 75.5
Additional paid-in capital	1,348.6
Retained earnings	15,982.1
Common stock in treasury, at cost, shares of 144.8	(6,433.3)
Accumulated other comprehensive loss	(2,914.4)
Total stockholders' equity	8,058.5

ILLUSTRATION 4.14 Balance Sheet Presentation of Stockholders' Equity

The ownership or stockholders' equity accounts in a corporation differ considerably from those in a partnership or proprietorship. Partners show separately their permanent capital accounts and the balance in their temporary accounts (drawing accounts). Proprietorships ordinarily use a single capital account that handles all of the owner's equity transactions.

Accounting Matters? — Warning Signals

Analysts use balance sheet information in models designed to predict financial distress. Researcher E. I. Altman pioneered a bankruptcy-prediction model that derives a "Z-score" by combining balance sheet and income measures in the following equation.

$$Z = \frac{\text{Working capital}}{\text{Total assets}} \times 1.2 + \frac{\text{Retained earnings}}{\text{Total assets}} \times 1.4 + \frac{\text{EBIT}}{\text{Total assets}} \times 3.3 + \frac{\text{Sales}}{\text{Total assets}} \times 0.99 + \frac{\text{MV equity}}{\text{Total liabilities}} \times 0.6$$

Following extensive testing, Altman found that companies with Z-scores above 3.0 are unlikely to fail. Those with Z-scores below 1.81 are very likely to fail.

At one time, the use of Z-scores was virtually unheard of among practicing accountants. Today, auditors, management consultants, and courts of law use this measure to help evaluate the overall financial position and trends of a firm. Altman himself used the Z-score in his 2008 testimony evaluating a government bailout of **General Motors** and **Chrysler**. More recently, the Z-score was used to indicate the resilience of companies in times of crisis.

Sources: Adapted from E. I. Altman and E. Hotchkiss, *Corporate Financial Distress and Bankruptcy,* Third Edition (New York: John Wiley and Sons, 2006); and Jeffrey Caso, Peeyash Karnani, and Mihir Mysore, "Resilience in a Crisis: An Interview with Professor Edward I. Altman," McKinsey & Company (November 19, 2020).

Format of the Balance Sheet

The most common form of the balance sheet is the **report form,** which lists the balance sheet sections one above the other, on the same page. See, for example, **Illustration 4.15**, which lists assets, followed by liabilities and stockholders' equity (see **Underlying Concepts**).

Scientific Products, Inc.
Balance Sheet
December 31, 2025

Assets			
Current assets			
Cash		$ 42,485	
Investments (available-for-sale)		28,250	
Accounts receivable	$165,824		
Less: Allowance for doubtful accounts	1,850	163,974	
Notes receivable		23,000	
Inventories—at average-cost		489,713	
Supplies on hand		9,780	
Prepaid expenses		16,252	
Total current assets			$ 773,454

ILLUSTRATION 4.15 Classified Report Form Balance Sheet

Underlying Concepts

The presentation of balance sheet information meets the objective of financial reporting—to provide information about entity resources, claims to resources, and changes in them.

ILLUSTRATION 4.15 (continued)

Long-term investments			
Equity investments			87,500
Property, plant, and equipment			
Land—at cost		125,000	
Buildings—at cost	975,800		
Less: Accumulated depreciation	341,200	634,600	
Total property, plant, and equipment			759,600
Intangible assets			
Goodwill			100,000
Total assets			$1,720,554
Liabilities and Stockholders' Equity			
Current liabilities			
Notes payable to banks		$ 50,000	
Accounts payable		197,532	
Accrued interest on notes payable		500	
Income taxes payable		62,520	
Accrued salaries, wages, and other liabilities		9,500	
Deposits received from customers		420	
Total current liabilities			$ 320,472
Long-term debt			
Twenty-year 6% debentures, due January 1, 2028			500,000
Total liabilities			820,472
Stockholders' equity			
Paid-in capital			
Preferred, 7%, cumulative			
Authorized, issued, and outstanding, 30,000 shares of $10 par value	$300,000		
Common—			
Authorized, 500,000 shares of $1 par value; issued and outstanding, 400,000 shares	400,000		
Additional paid-in capital	37,500	737,500	
Retained earnings		153,182	
Accumulated other comprehensive income		22,150	
Less: Treasury stock		12,750	
Total stockholders' equity			900,082
Total liabilities and stockholders' equity			$1,720,554

Infrequently, companies use other balance sheet formats. For example, companies sometimes deduct current liabilities from current assets to arrive at working capital. Or, they deduct all liabilities from all assets.

FACTS Sanchez Company has the following accounts at December 31, 2025.

Common Stock
Discount on Bonds Payable
Treasury Stock (at cost)
Notes Payable (short-term)
Raw Materials
Preferred Stock Investments (long-term)
Unearned Rent Revenue
Work in Process
Copyrights
Buildings
Notes Receivable (short-term)
Cash
Salaries and Wages Payable
Accumulated Depreciation—Buildings
Accumulated Other Comprehensive Income
Cash Restricted for Plant Expansion
Land Held for Future Plant Site
Allowance for Doubtful Accounts—Accounts Receivable
Retained Earnings
Additional Paid-in Capital
Unearned Subscriptions Revenue
Receivables—Officers (due in one year)
Finished Goods
Accounts Receivable
Bonds Payable (due in 4 years)
Right-of-Use Asset
Goodwill

Put It into Practice LO 4.1

Prepare a Balance Sheet

INSTRUCTIONS

Prepare a classified balance sheet in good form. (No monetary amounts are necessary.)

SOLUTION

Sanchez Company Balance Sheet December 31, 2025			
Assets			
Current assets			
Cash (less cash restricted for plant expansion)		$XXX	
Accounts receivable	$XXX		
Less: Allowance for doubtful accounts	XXX	XXX	
Notes receivable		XXX	
Receivables—officers		XXX	
Inventory			
Finished goods	XXX		
Work in process	XXX		
Raw materials	XXX	XXX	
Total current assets			$XXX
Long-term investments			
Preferred stock investments		XXX	
Land held for future plant site		XXX	
Cash restricted for plant expansion		XXX	
Total long-term investments			XXX
Property, plant, and equipment			
Buildings		XXX	
Less: Accumulated depreciation—buildings		XXX	XXX
Right-of-use asset			XXX
Intangible assets			
Copyrights			XXX
Goodwill			XXX
Total assets			$XXX
Liabilities and Stockholders' Equity			
Current liabilities			
Notes payable (short-term)		$XXX	
Salaries and wages payable		XXX	
Unearned subscriptions revenue		XXX	
Unearned rent revenue		XXX	
Total current liabilities			$XXX
Long-term debt			
Bonds payable (due in four years)		XXX	
Less: Discount on bonds payable		XXX	XXX
Total liabilities			XXX
Stockholders' equity			
Common stock	$XXX		
Additional paid-in capital	XXX		
Total paid-in capital		XXX	
Retained earnings		XXX	
Accumulated other comprehensive income		XXX	
Less: Treasury stock (at cost)		XXX	
Total stockholders' equity			XXX
Total liabilities and stockholders' equity			$XXX

4.2 Statement of Cash Flows

LEARNING OBJECTIVE 2

Explain the purpose, content, preparation, and usefulness of the statement of cash flows.

Chapter 1 indicated that an important element of the objective of financial reporting is "assessing the amounts, timing, and uncertainty of cash flows." The three financial statements we have looked at so far—the income statement, the statement of stockholders' equity, and the balance sheet—each present some information about the cash flows of an enterprise during a period. But they do so to a limited extent.

- The income statement provides information about resources provided by operations but not exactly cash.
- The statement of stockholders' equity shows the amount of cash provided by issuing more capital stock and used to pay dividends or purchase treasury stock.
- Comparative balance sheets might show what assets the company has acquired or disposed of, and what liabilities it has incurred or liquidated.

Useful as they are, none of these statements presents a detailed summary of all the cash inflows and outflows, or the sources and uses of cash during the period. To fill this need, the FASB requires the **statement of cash flows** (also called the **cash flow statement**). [5]

Underlying Concepts

The statement of cash flows meets the objective of financial reporting—to help assess the amounts, timing, and uncertainty of future cash flows.

Purpose of the Statement of Cash Flows

The primary purpose of a statement of cash flows is to provide relevant information about the cash receipts and cash payments of an enterprise during a period (see **Underlying Concepts**). To achieve this purpose, the statement of cash flows reports the following: (1) the cash effects of operations during a period, (2) investing transactions, (3) financing transactions, and (4) the net increase or decrease in cash during the period.[5]

Reporting the sources, uses, and net increase or decrease in cash helps investors, creditors, and others know what is happening to a company's most liquid resource. Because most individuals maintain a checkbook and prepare a tax return on a cash basis, they can comprehend the information reported in the statement of cash flows.

The statement of cash flows provides answers to the following simple but important questions:

1. Where did the cash come from during the period?
2. What was the cash used for during the period?
3. What was the change in the cash balance during the period?

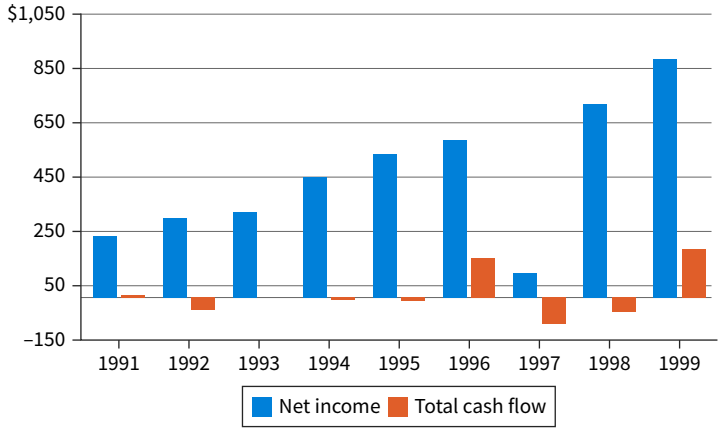
Accounting Matters — **Watch That Cash Flow**

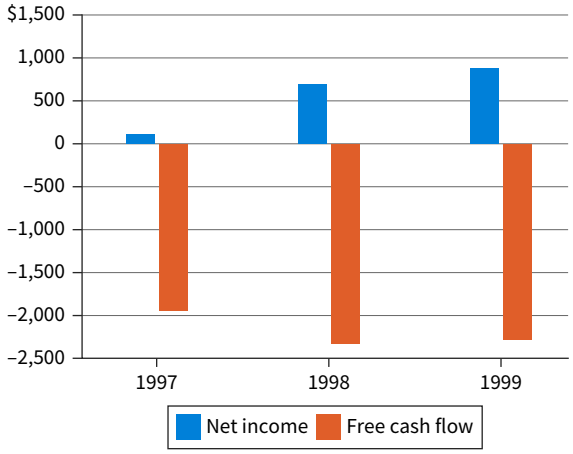
Accrual-based net income and the resulting earnings per share are important metrics when reviewing a company's financial performance. But what about cash? Cash is critical to a company's long-term survival, making the statement of cash flows a critical piece to the financial reporting puzzle.

Consider **Enron**. As shown in the following charts, Enron reported impressive, and consistent, growth in its net income through the 1990s. Its cash flows, however, painted a very different picture, only reporting positive cash flows three times from 1991 through 1999.

Even more telling was Enron's **free cash flow**, which is defined as operating cash flow less dividends and capital expenditures. Free cash flow is used to evaluate a company's ability to repay creditors or pay dividends or interest to investors. In the years leading up to Enron's collapse, the company reported substantial negative free cash flows, a warning signal indeed. Enron engaged in many questionable accounting practices, and its cash flow reporting was no exception. In the end, cash does not lie.

[5]The FASB recommends the basis as "cash and cash equivalents." **Cash equivalents** are liquid investments that mature within three months or less.





Sources: Enron Corp. 10-K annual reports; and Bala G. Dharan and William R. Bufkins, "Red Flags in Enron's Reporting of Revenues and Key Financial Measures," *Semantic Scholar* (2008).

Content of the Statement of Cash Flows

Companies classify cash receipts and cash payments during a period into three different activities in the statement of cash flows as follows.

1. **Operating activities** involve the cash effects of transactions that enter into the determination of net income.
2. **Investing activities** include making and collecting loans and acquiring and disposing of investments (both debt and equity) and property, plant, and equipment.
3. **Financing activities** involve liability and owners' or stockholders' equity items. They include (a) obtaining resources from owners and providing them with a return on their investment, and (b) borrowing money from creditors and repaying the amounts borrowed.

Illustration 4.16 shows the basic format of the statement of cash flows (see **Global View**).

Statement of Cash Flows

Cash flows from operating activities	$XXX
Cash flows from investing activities	XXX
Cash flows from financing activities	XXX
Net increase (decrease) in cash	XXX
Cash at beginning of year	XXX
Cash at end of year	$XXX

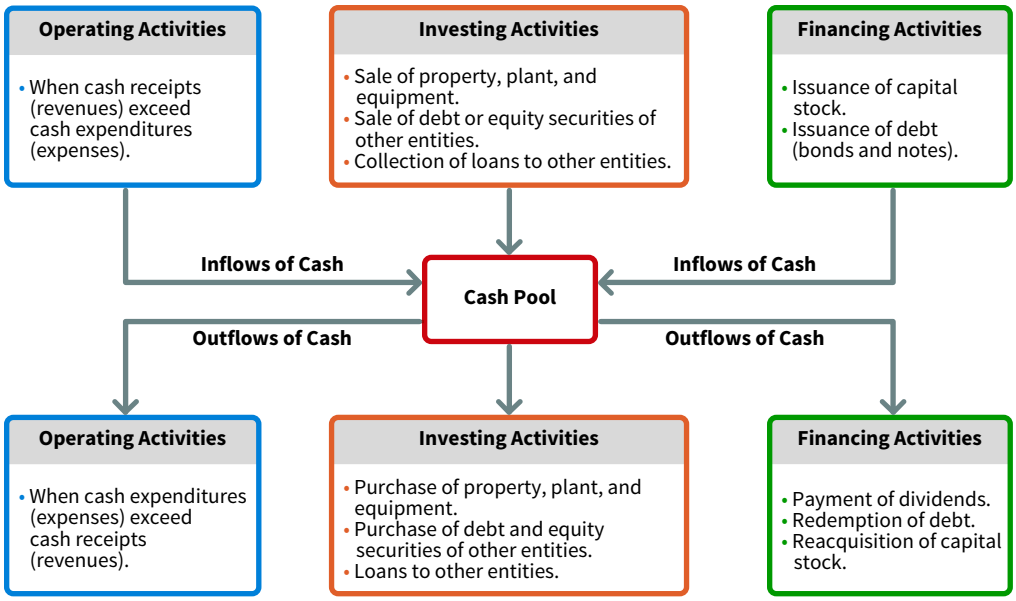
ILLUSTRATION 4.16 Basic Format of Cash Flow Statement

Global View

IFRS requires a statement of cash flows. Both IFRS and GAAP specify that the cash flows must be classified as operating, investing, or financing. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

Illustration 4.17 shows the inflows and outflows of cash classified by activity.

ILLUSTRATION 4.17 Cash Inflows and Outflows


Operating Activities
• When cash receipts (revenues) exceed cash expenditures (expenses).
Investing Activities
• Sale of property, plant, and equipment.
• Sale of debt or equity securities of other entities.
• Collection of loans to other entities.
Financing Activities
• Issuance of capital stock.
• Issuance of debt (bonds and notes).
Inflows of Cash
Inflows of Cash
Cash Pool
Outflows of Cash
Outflows of Cash
Operating Activities
• When cash expenditures (expenses) exceed cash receipts (revenues).
Investing Activities
• Purchase of property, plant, and equipment.
• Purchase of debt and equity securities of other entities.
• Loans to other entities.
Financing Activities
• Payment of dividends.
• Redemption of debt.
• Reacquisition of capital stock.

The statement's value is that it helps users evaluate liquidity, solvency, and financial flexibility. As stated earlier, **liquidity** refers to the "nearness to cash" of assets and liabilities. **Solvency** is the firm's ability to pay its debts as they mature. **Financial flexibility** is a company's ability to respond and adapt to financial adversity and unexpected needs and opportunities.

We have devoted Chapter 22 entirely to the detailed preparation and content of the statement of cash flows. The intervening chapters will cover several elements and complex topics that affect the content of a typical statement of cash flows. The presentation in this chapter is introductory—a reminder of the existence of the statement of cash flows and its usefulness.

Preparation of the Statement of Cash Flows

Sources of Information

Companies obtain the information to prepare the statement of cash flows from several sources: (1) comparative balance sheets, (2) the current income statement, and (3) selected transaction data.

The following example demonstrates how companies use these sources in preparing a statement of cash flows. On January 1, 2025, in its first year of operations, Telemarketing Inc. issued 50,000 shares of $1 par value common stock for $50,000 cash. The company rented its office space, furniture, and telecommunications equipment and performed marketing services throughout the first year. In June 2025, the company purchased land for $15,000. Illustration 4.18 shows the company's comparative balance sheets at the beginning and end of 2025.

ILLUSTRATION 4.18 Comparative Balance Sheets

Telemarketing Inc.
Balance Sheets

	Dec. 31, 2025	Jan. 1, 2025	Increase/Decrease
Assets			
Cash	$31,000	$–0–	$31,000 Increase
Accounts receivable	41,000	–0–	41,000 Increase
Land	15,000	–0–	15,000 Increase
Total	$87,000	$–0–	
Liabilities and Stockholders' Equity			
Accounts payable	$12,000	$–0–	$12,000 Increase
Common stock	50,000	–0–	50,000 Increase
Retained earnings	25,000	–0–	25,000 Increase
Total	$87,000	$–0–	

Illustration 4.19 presents the income statement and additional information.

ILLUSTRATION 4.19 Income Statement Data

Telemarketing Inc.
Income Statement
For the Year Ended December 31, 2025

Revenues	$172,000
Operating expenses	120,000
Income before income tax	52,000
Income tax	13,000
Net income	$ 39,000

Additional information:

Dividends of $14,000 were paid during the year.

Preparing the Statement of Cash Flows

Preparing the statement of cash flows from these sources involves four steps.

1. Determine the net cash provided by (or used in) operating activities.
2. Determine the net cash provided by (or used in) investing and financing activities.
3. Determine the change (increase or decrease) in cash during the period.
4. Reconcile the change in cash with the beginning and the ending cash balances.

Step 1. Determine Net Cash Provided by Operating Activities This step calculates the excess of cash receipts over cash payments from operating activities. Companies determine this amount by converting net income on an accrual basis to a cash basis. To do so, they adjust net income for items that do not affect cash. This procedure requires that a company analyze not only the current year's income statement but also the comparative balance sheets and selected transaction data.

Analysis of Telemarketing's comparative balance sheets reveals two items that will affect the computation of net cash provided by operating activities, as follows.

1. The increase in accounts receivable reflects a noncash increase of $41,000 in revenues. What caused accounts receivable to increase? It increased because goods were sold on credit or services were performed on credit. Revenue increased, and so did net income, but no cash was received. Therefore, $41,000 should be subtracted from net income.

Accounts Receivable	41,000	
Sales (Service) Revenue		41,000

2. The increase in accounts payable reflects a noncash increase of $12,000 in expenses. What caused accounts payable to increase? It increased because various expenses were incurred, but no cash was paid. Expenses increased, and therefore net income decreased, but cash was not affected. Therefore, $12,000 should be added back to net income.

Utilities Expense	12,000	
Accounts Payable		12,000

Illustration 4.20 shows the computation of net cash provided by operating activities of $10,000 for Telemarketing.

ILLUSTRATION 4.20 Computation of Net Cash Provided by Operating Activities

Net income		$ 39,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Increase in accounts receivable	$(41,000)	
Increase in accounts payable	12,000	(29,000)
Net cash provided by operating activities		$ 10,000

Step 2. Determine the Net Cash Provided by (or Used in) Investing and Financing Activities Next, the company determines its investing and financing activities. Telemarketing's only **investing activity** was the land purchase. It had two **financing activities**: (1) common stock increased $50,000 from the issuance of 50,000 shares for cash, and (2) the company paid $14,000 cash in dividends, as shown in Illustration 4.21.

ILLUSTRATION 4.21 Determining Investing and Financing Activities

Land	15,000		The credit to Cash in this journal entry indicates a cash outflow from an investing activity.
Cash		**15,000**	
Cash	**50,000**		The debit to Cash in this journal entry indicates a cash inflow from a financing activity.
Common Stock		50,000	
Retained Earnings	14,000		The credit to Cash in this journal entry indicates a cash outflow from a financing activity.
Cash		**14,000**	

Step 3. Determine the Change (Increase or Decrease) in Cash During the Period Knowing the amounts provided/used by operating, investing, and financing activities, the company determines the **net change in cash**. Illustration 4.22 presents Telemarketing's statement of cash flows for 2025, which shows a net increase in cash of $31,000.

ILLUSTRATION 4.22 Statement of Cash Flows

Telemarketing Inc.
Statement of Cash Flows
For the Year Ended December 31, 2025

Cash flows from operating activities		
Net income		$39,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Increase in accounts receivable	$(41,000)	
Increase in accounts payable	12,000	(29,000)
Net cash provided by operating activities		10,000
Cash flows from investing activities		
Purchase of land	(15,000)	
Net cash used by investing activities		(15,000)
Cash flows from financing activities		
Issuance of common stock	50,000	
Payment of cash dividends	(14,000)	
Net cash provided by financing activities		36,000
Net increase in cash		31,000
Cash at beginning of year		–0–
Cash at end of year		$31,000

Step 4. Reconcile the Change in Cash with the Beginning and the Ending Cash Balances The increase in cash of $31,000 reported in the statement of cash flows **agrees with** the increase of $31,000 in cash calculated from the comparative balance sheets.

Significant Noncash Activities

Not all of a company's significant activities involve cash. Examples of significant noncash activities are as follows.

1. Issuance of common stock to purchase assets.
2. Conversion of bonds into common stock.

3. Issuance of debt to purchase assets.
4. Exchanges of long-lived assets.

Significant financing and investing activities that do not affect cash are not reported in the body of the statement of cash flows. Rather, these activities are reported in either a separate schedule at the bottom of the statement of cash flows or in separate notes to the financial statements. Reporting of these noncash activities satisfies the full disclosure principle.

Illustration 4.23 shows an example of a more comprehensive statement of cash flows. Note that the company purchased equipment through the issuance of $50,000 of bonds, which is a significant noncash transaction. *In solving homework assignments, you should present significant noncash activities in a separate schedule at the bottom of the statement of cash flows.*

ILLUSTRATION 4.23
Comprehensive Statement of Cash Flows

Nestor Company
Statement of Cash Flows
For the Year Ended December 31, 2025

Cash flows from operating activities		
Net income		$320,750
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 88,400	
Amortization of intangibles	16,300	
Gain on sale of plant assets	(8,700)	
Increase in accounts receivable (net)	(11,000)	
Decrease in inventory	15,500	
Decrease in accounts payable	(9,500)	91,000
Net cash provided by operating activities		411,750
Cash flows from investing activities		
Sale of plant assets	90,500	
Purchase of equipment	(182,500)	
Purchase of land	(70,000)	
Net cash used by investing activities		(162,000)
Cash flows from financing activities		
Payment of cash dividend	(19,800)	
Issuance of common stock	100,000	
Redemption of bonds	(50,000)	
Net cash provided by financing activities		30,200
Net increase in cash		279,950
Cash at beginning of year		135,000
Cash at end of year		$414,950

Noncash investing and financing activities:
Purchase of equipment through issuance of $50,000 of bonds

Usefulness of the Statement of Cash Flows

"Happiness is a positive cash flow" is certainly true. Although net income provides a long-term measure of a company's success or failure, cash is its lifeblood. Without cash, a company will not survive. For small and newly developing companies, cash flow is the single-most important element for survival. Even medium and large companies must control cash flow.

Creditors examine the cash flow statement carefully because they are concerned about being paid. They begin their examination by finding net cash provided by operating activities. A high amount indicates that a company is able to generate sufficient cash from operations to pay its bills without further borrowing. Conversely, a low or negative amount of net cash provided by operating activities indicates that a company may have to borrow or issue stock to acquire sufficient cash to pay its bills. Consequently, creditors look for answers to the following questions in the company's cash flow statements.

1. How successful is the company in generating net cash provided by operating activities?
2. What are the trends in net cash flow provided by operating activities over time?
3. What are the major reasons for the positive or negative net cash provided by operating activities?

You should recognize that companies can fail even though they report net income. The difference between net income and net cash provided by operating activities can be substantial. Companies such as **W. T. Grant Company** and **Prime Motor Inn**, for example, reported high net income numbers but negative net cash provided by operating activities. Eventually, both companies filed for bankruptcy.

In addition, substantial increases in receivables and/or inventory can explain the difference between positive net income and negative net cash provided by operating activities. For example, in its first year of operations, Hu Inc. reported a net income of $80,000. Its net cash provided by operating activities, however, was a negative $95,000, as shown in **Illustration 4.24**.

ILLUSTRATION 4.24 Negative Net Cash Provided by Operating Activities

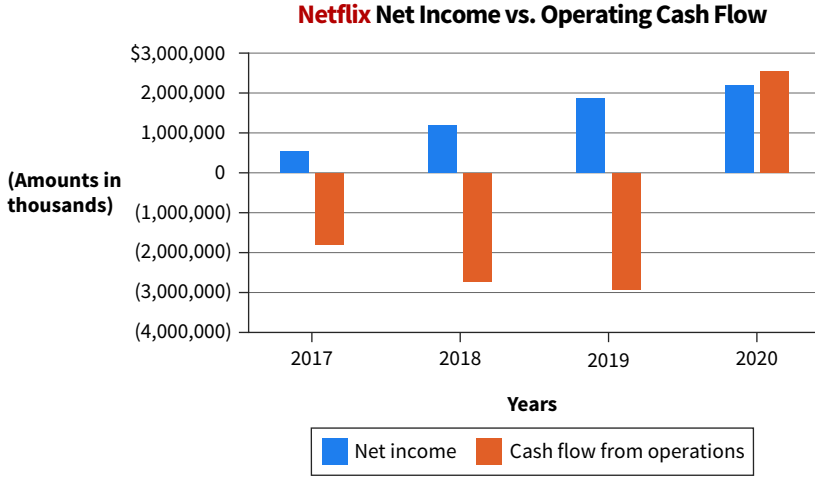
Hu Inc.
Statement of Cash Flows (partial)

Cash flows from operating activities		
Net income		$ 80,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Increase in receivables	$ (75,000)	
Increase in inventories	(100,000)	(175,000)
Net cash provided by operating activities		$ (95,000)

Hu could easily experience a "cash crunch" because it has its cash tied up in receivables and inventory. If Hu encounters problems in collecting receivables, or if inventory moves slowly or becomes obsolete, it may have difficulty paying it debts on time.

Accounting Matters — Cash Flow Conundrum

Negative cash flow isn't always **negative**. Consider **Netflix, Inc.** With the influx of competition in online streaming, Netflix embarked on a cash-intensive content development pipeline with the goal of producing more original content, leading to more subscriptions and ultimately profit and positive cash flow. As shown in the graph, while Netflix was reporting net income for the years 2017–2019, it was also reporting substantial negative operating cash flows. However, its investments started to pay off in 2020 when the company continued to show growth in its net income while also posting positive operating cash flows.



Sources: Netflix Inc. 10-K; and Tatyana Shumsky, "New Netflix CFO to Tackle Cash Flow Conundrum," *Wall Street Journal* (January 2, 2019).

Liquidity

Readers of financial statements often assess liquidity by using the **current cash debt coverage**. It indicates whether the company can pay off its current liabilities from its operations in a given year. The formula for this ratio is as follows.

$$\frac{\text{Net Cash Provided by Operating Activities}}{\text{Average Current Liabilities}} = \text{Current Cash Debt Coverage}$$

The higher the current cash debt coverage, the less likely a company will have liquidity problems. For example, a ratio near 1:1 is good. It indicates that the company can meet all of its current obligations from internally generated cash flow.

Financial Flexibility

The **cash debt coverage** provides information on financial flexibility. It indicates a company's ability to repay its liabilities from net cash provided by operating activities, without having to liquidate the assets employed in its operations. The formula for this ratio is as follows.

$$\frac{\text{Net Cash Provided by Operating Activities}}{\text{Average Total Liabilities}} = \text{Cash Debt Coverage}$$

Notice its similarity to the current cash debt coverage. However, because it uses average total liabilities in place of average current liabilities, it takes a somewhat longer-range view.

The higher this ratio, the less likely the company will experience difficulty in meeting its obligations as they come due. It signals whether the company can pay its debts and survive if external sources of funds become limited or too expensive.

Free Cash Flow

A more sophisticated way to examine a company's financial flexibility is to develop a free cash flow analysis. **Free cash flow** is the amount of discretionary cash flow a company has. It can use this cash flow to purchase additional investments, retire its debt, purchase treasury stock, or simply add to its liquidity. Financial statement users calculate free cash flow as follows.

$$\text{Net Cash Provided by Operating Activities} - \text{Capital Expenditures} - \text{Cash Dividends} = \text{Free Cash Flow}$$

In a free cash flow analysis, we first deduct capital spending, to indicate it is the least discretionary expenditure a company generally makes. (Without continued efforts to maintain and expand facilities, it is unlikely that a company can continue to maintain its competitive position.) We then deduct dividends. Although a company **can** cut its dividend, it usually will do so only in **a financial emergency**. The amount resulting after these deductions is the company's free cash flow. Obviously, the greater the amount of free cash flow, the greater the company's financial flexibility.

Questions that a free cash flow analysis answer include:

1. Is the company able to pay its dividends without resorting to external financing?
2. If business operations decline, will the company be able to maintain its needed capital investment?
3. What is the amount of discretionary cash flow that can be used for additional investment, retirement of debt, purchase of treasury stock, or addition to liquidity?

Illustration 4.25 is a free cash flow analysis using the cash flow statement for Nestor Company (shown in Illustration 4.23).

ILLUSTRATION 4.25 Free Cash Flow Computation

Nestor Company Free Cash Flow Analysis		
Net cash provided by operating activities		$411,750
Less: Capital expenditures	$252,500	
Dividends	19,800	272,300
Free cash flow		$139,450

This computation shows that Nestor has a positive, and substantial, net cash provided by operating activities of $411,750. Nestor's statement of cash flows reports that the company purchased equipment of $182,500 and land of $70,000 for total capital spending of $252,500. Nestor has more than sufficient cash flow to meet its dividend payment and therefore has satisfactory financial flexibility.

As you can see from looking back at Illustration 4.23, Nestor used its free cash flow to redeem bonds and add to its liquidity. If it finds additional investments that are profitable, it can increase its spending without putting its dividend or basic capital spending in jeopardy.

- Companies that have strong financial flexibility can take advantage of profitable investments even in tough times.
- In addition, strong financial flexibility frees companies from worry about survival in poor economic times.

In fact, those with strong financial flexibility often fare better in a poor economy because they can take advantage of opportunities that other companies cannot.

Put It into Practice LO 4.2

Prepare a Statement of Cash Flows

FACTS Cassy Corporation's balance sheet at the end of 2024 included the following items.

Current assets	$282,000	Current liabilities	$180,000
Land	36,000	Bonds payable	120,000
Buildings	144,000	Common stock	216,000
Equipment	108,000	Retained earnings	52,800
Accumulated depreciation—buildings	(36,000)	Total	$568,800
Accumulated depreciation—equipment	(13,200)		
Patents	48,000		
Total	$568,800		

The following information is available for 2025.

1. Treasury stock was purchased at a cost of $13,200.
2. Cash dividends of $36,000 were declared and paid.
3. A long-term investment in stock was purchased for $19,200.

4. Current assets other than cash increased by $34,800. Current liabilities increased by $15,600.
5. Depreciation expense was $4,800 on the building and $10,800 on equipment.
6. Net income was $66,000.
7. Bonds payable of $60,000 were issued.
8. An addition to the building was completed at a cost of $32,400.
9. Patent amortization was $3,000.
10. Equipment (cost $24,000 and accumulated depreciation $9,600) was sold for $12,000.

INSTRUCTIONS

a. Prepare a balance sheet at December 31, 2025.

b. Prepare a statement of cash flows for 2025. The cash balance at January 1, 2025, was $5,000.

SOLUTION

a.

Cassy Corporation
Balance Sheet
December 31, 2025

Assets			
Current assets (see Notes below)			$355,800
Long-term investments			19,200
Property, plant, and equipment			
Land		$ 36,000	
Buildings ($144,000 + $32,400)	$176,400		
Less: Accumulated depreciation—buildings ($36,000 + $4,800)	40,800	135,600	
Equipment ($108,000 − $24,000)	84,000		
Less: Accumulated depreciation—equipment ($13,200 − $9,600 + $10,800)	14,400	69,600	
Total property, plant, and equipment			241,200
Intangible assets—patents ($48,000 − $3,000)			45,000
Total assets			$661,200
Liabilities and Stockholders' Equity			
Current liabilities ($180,000 + $15,600)			$195,600
Long-term liabilities			
Bonds payable ($120,000 + $60,000)			180,000
Total liabilities			375,600
Stockholders' equity			
Common stock		$216,000	
Retained earnings ($52,800 + $66,000 − $36,000)		82,800	
		298,800	
Less: Cost of treasury stock		13,200	
Total stockholders' equity			285,600
Total liabilities and stockholders' equity			$661,200

Notes: The amount determined for current assets is computed last and is a "plug" figure. That is, total liabilities and stockholders' equity is computed because information is available to determine this amount. Because the total assets amount is the same as the total liabilities and stockholders' equity amount, the amount of total assets is determined. Information is available to compute all the asset amounts except current assets. Therefore, current assets can be determined by deducting the total of all the other asset balances from the total asset balance (i.e., $661,200 − $45,000 − $241,200 − $19,200).

b.

Cassy Corporation
Statement of Cash Flows
For the Year Ended December 31, 2025

Cash flows from operating activities		
Net income		$66,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Loss on sale of equipment [($24,000 − $9,600) − $12,000]	$ 2,400	
Depreciation expense	15,600	
Patent amortization	3,000	
Increase in current liabilities	15,600	
Increase in current assets (other than cash)	(34,800)	1,800
Net cash provided by operating activities		67,800
Cash flows from investing activities		
Sale of equipment	12,000	
Addition to building	(32,400)	
Investment in stock	(19,200)	
Net cash used by investing activities		(39,600)
Cash flows from financing activities		
Issuance of bonds	60,000	
Payment of dividends	(36,000)	
Purchase of treasury stock	(13,200)	
Net cash provided by financing activities		10,800
Net increase in cash		39,000
Cash at the beginning of the year		5,000
Cash at the end of the year		$44,000

APPENDIX **4A**

Additional Information

LEARNING OBJECTIVE *3

Describe additional types of information provided.

Underlying Concepts

The basis for including additional information should meet the *full disclosure principle*. That is, the information should be of sufficient importance to influence the judgment of an informed user.

In this chapter, we have discussed the balance sheet and statement of cash flows that all companies prepare in accordance with GAAP. However, these financial statements cannot provide the complete picture related to the financial position and financial performance of a company. Additional descriptive information in note disclosures and certain techniques of disclosure expand on and amplify the items presented in the main body of the statements (see **Underlying Concepts**). For example, the balance sheet is not complete if a company simply lists the asset, liability, and owners' equity accounts.

Notes to the Financial Statements

Recall that notes are an integral part of reporting financial statement information. Notes can:

- Explain in qualitative terms information related to specific financial statement items.
- Provide supplemental data of a quantitative nature to expand the information in financial statements.
- Explain restrictions imposed by financial arrangements or basic contractual agreements.

Although notes may be technical and difficult to understand, they provide meaningful information for users of financial statements.[6]

Accounting Policies

Accounting policies are the specific principles, bases, conventions, rules, and practices applied by a company in preparing and presenting financial information. GAAP recommends disclosure for all significant accounting principles and methods that involve selection from among alternatives or those that are peculiar to a given industry. **[6]** For instance, companies can:

- Compute inventories under several cost flow assumptions (e.g., LIFO and FIFO).
- Depreciate property, plant, and equipment under several accepted methods (e.g., double-declining-balance and straight-line).
- Carry investments at different valuations (e.g., amortized cost, equity, and fair value).

Sophisticated users of financial statements know of these possibilities and examine the statements closely to determine the methods used.

Companies therefore present a "Summary of Significant Accounting Policies" generally as the first note to the financial statements. This disclosure is important because, under GAAP, alternative treatments of a transaction are sometimes permitted. If these policies are not understood, users of financial statements are not able to compare the financial statements among companies. **Illustration 4A.1** presents the accounting policy related to revenue recognition as reported by **Microsoft**.

ILLUSTRATION 4A.1
Accounting Policy Note

Microsoft Corporation

Note 1—Accounting Policies (in part):

Revenue Recognition
Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We enter into contracts that can include various combinations of products and services, which are generally capable of being distinct and accounted for as separate performance obligations. Revenue is recognized net of allowances for returns and any taxes collected from customers, which are subsequently remitted to governmental authorities.

Related to accounting policies, companies must also disclose information about the nature of their operations, the use of estimates in preparing financial statements, and certain significant estimates. **[7]** **Illustration 4A.2** shows an example of such a disclosure.

[6] *Conceptual Framework for Financial Reporting—Chapter 8, Notes to Financial Statements* (August 2018) addresses the Board's decision process in identifying disclosures to be considered when setting standards-level disclosure requirements, as well as evaluating existing disclosure requirements. The concepts are consistent with the discussion in this section.

ILLUSTRATION 4A.2 Balance Sheet Disclosure of Estimates and Assumptions

Microsoft Corporation

Preparing financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, and expenses. Examples of estimates and assumptions include: for revenue recognition, determining the nature and timing of satisfaction of performance obligations, and determining the standalone selling price ("SSP") of performance obligations, variable consideration, and other obligations such as product returns and refunds; loss contingencies; product warranties; the fair value of and/or potential impairment of goodwill and intangible assets for our reporting units; product life cycles; useful lives of our tangible and intangible assets; allowances for doubtful accounts; the market value of, and demand for, our inventory; stock-based compensation forfeiture rates; when technological feasibility is achieved for our products; the potential outcome of uncertain tax positions that have been recognized in our consolidated financial statements or tax returns; and determining the timing and amount of impairments for investments. Actual results and outcomes may differ from management's estimates and assumptions due to risks and uncertainties, including uncertainty in the current economic environment due to the recent outbreak of a novel strain of the coronavirus ("COVID-19").

Additional Notes to the Financial Statements

In addition to a note related to the explanation of their accounting policies, companies use specific notes to discuss items in the financial statements. Judgment must be exercised to identify the important aspects of financial information that need amplification in the notes. In many cases, the profession requires specific disclosures. For the balance sheet, note disclosures include (1) contractual situations, (2) contingencies, and (3) information on fair values.

Contractual Situations Companies should disclose contractual situations, if significant, in the notes to the financial statements. For example, they must clearly state the essential provisions of lease contracts, pension obligations, and stock compensation plans in the notes. Analysts want to know not only the amount of the liabilities but also how the different contractual provisions affect the company at present and in the future. Companies must disclose the following commitments if the amounts are material.

- To maintain working capital.
- To limit the payment of dividends.
- To restrict the use of assets.
- To require the maintenance of certain financial ratios.

Indeed, many of the recent accounting scandals related to the nondisclosure of significant contractual obligations. In response, the SEC has mandated that companies disclose contractual obligations in a tabular summary in the management discussion and analysis section of the company's annual report. Presented in **Illustration 4A.3** is a disclosure from **The Procter & Gamble Company**.

ILLUSTRATION 4A.3 Contractual Commitments

The Procter & Gamble Company

Contractual commitments (in part)
The following table provides information on the amount and payable date of our contractual commitments as of June 30, 2020.

($ millions)	Total	Less Than 1 Year	1-3 Years	3-5 Years	After 5 Years
Recorded Liabilities					
Total debt	**$ 34,589**	$ 11,189	$ 5,154	$ 5,148	$ 13,098
Leases	**1,023**	239	352	220	212
U.S Tax Act transitional change[1]	**2,346**	224	450	984	688
Uncertain tax positions[2]	**59**	59	—	—	—

ILLUSTRATION 4A.3 (continued)

Other					
Interest payments relating to long-term dept	**6,676**	673	1,173	955	3,875
Minimum pension funding[3]	**603**	196	407	—	—
Purchase obligations[4]	**1,577**	782	412	145	238
Total Contractual Commitments	**$ 46,873**	$ 13,362	$ 7,948	$ 7,452	$ 18,111

(1)Represents the U.S federal tax liability association with the repatriation provisions of the U.S Tax Act. Does not include any provisions made for foreign withholding taxes on expect repatriations as the timing of those payments is uncertain.

(2)As of June 30, 2020, the Company's Consolidated Balance Sheet reflects a liability for uncertain tax positions of $643 million, including $158 million of interest and penalties.

(3)Represents future pension payments to comply with local funding requirements. These future pension payments assume the Company continues to meet its future statutory funding requirements.

(4)Primarily reflects future contractual payments under various take-or-pay arrangements entered into as part of the normal course of business. Commitments made under take-or-pay obligations represent minimum commitments under take-or-pay agreements with suppliers and are in line with expected usage.

Management must exercise considerable judgment to determine whether omission of such information is misleading. The rule in this situation is, "When in doubt, disclose." It is better to disclose a little too much information than not enough.

Contingencies A **contingency** is an existing situation involving uncertainty as to possible gain (gain contingency) or loss (loss contingency) that will ultimately be resolved when one or more future events occur or fail to occur.

- In short, contingencies are material events with an uncertain future.
- Examples of gain contingencies are tax operating-loss carryforwards or company litigation against another party.
- Typical loss contingencies relate to litigation, environmental issues, possible tax assessments, or government investigations.

The note disclosure in **Illustration 4A.4** shows the presentation of such information based on the financial statements of **Costco Wholesale Corporation**.

ILLUSTRATION 4A.4
Contingency Disclosure

Costco Wholesale Corporation

Note 10—Commitments and Contingencies:
Legal Proceedings (in part)
The Company is involved in a number of claims, proceedings and litigation arising from its business and property ownership. In accordance with applicable accounting guidance, the Company establishes an accrual for legal proceedings if and when those matters reach a stage where they present loss contingencies that are both probable and reasonably estimable. There may be exposure to loss in excess of any amounts accrued. The Company monitors those matters for developments that would affect the likelihood of a loss (taking into account where applicable indemnification arrangements concerning suppliers and insurers) and the accrued amount, if any, thereof, and adjusts the amount as appropriate. As of the date of this Report, the Company has recorded immaterial accruals with respect to certain matters described below, in addition to other immaterial accruals for matters not described below. If the loss contingency at issue is not both probable and reasonably estimable, the Company does not establish an accrual, but will continue to monitor the matter for developments that will make the loss contingency both probable and reasonably estimable.

We examine the accounting and reporting requirements involving contingencies more fully in Chapter 12.

Fair Values As we discussed in Chapter 1, fair value information may be more useful than historical cost for certain types of assets and liabilities. This is particularly so in the case of **financial instruments**, which are defined as cash, an ownership interest, or a contractual right to receive or obligation to deliver cash or another financial instrument.

- Such contractual rights to receive cash or other financial instruments are assets.
- Contractual obligations to pay are liabilities.

Cash, investments, accounts receivable, and payables are examples of financial instruments.

Given the expanded use of fair value measurements, as also discussed in Chapter 1, GAAP also has expanded disclosures about fair value measurements. **[8]** To increase consistency and comparability in the use of fair value measures, companies follow a fair value hierarchy that provides insight into how to determine fair value, as follows.

1. **Level 1** measures (the least subjective) are based on observable inputs, such as market prices for identical assets or liabilities.
2. **Level 2** measures (more subjective) are based on market-based inputs other than those included in Level 1, such as those based on market prices for similar assets or liabilities.
3. **Level 3** measures (most subjective) are based on unobservable inputs, such as a company's own data or assumptions.[7]

For major groups of assets and liabilities, companies must make the following fair value disclosures: (1) the fair value measurement and (2) the fair value hierarchy level of the measurements as a whole, classified by Level 1, 2, or 3. **Illustration 4A.5** provides a disclosure for **Devon Energy** for its assets and liabilities measured at fair value.

ILLUSTRATION 4A.5
Disclosure of Fair Values

Devon Energy Corporation

Note 7: Fair Value Measurements (in part): Certain of Devon's assets and liabilities are reported at fair value in the accompanying balance sheets. The following table provides fair value measurement information for such assets and liabilities.

		Fair Value Measurements Using:		
	Total Fair Value	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(In millions)		
Assets:				
Short-term investments	$ 341	$ 341	$ —	$ —
Investment in Chevron common stock	1,327	1,327	—	—
Financial instruments	8	—	8	—
Liabilities:				
Financial instruments	497	—	497	—
Asset retirement obligation (ARO)	1,300	—	—	1,300

GAAP establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. As presented in the table above, this hierarchy consists of three broad levels. Level 1 inputs on the hierarchy consist of unadjusted quoted prices in active markets for identical assets and liabilities and have the highest priority. Level 3 inputs have the lowest priority. Devon uses appropriate valuation techniques based on the available inputs to measure the fair values of its assets and liabilities. When available, Devon measures fair value using Level 1 inputs because they generally provide the most reliable evidence of fair value.

[7]Level 3 fair value measurements may be developed using expected cash flow and present value techniques, as described in "Using Cash Flow Information and Present Value in Accounting," *Statement of Financial Accounting Concepts No. 7,* as discussed in Chapter 6.

In addition, companies must provide significant additional disclosure related to Level 3 measurements. The disclosures related to Level 3 are substantial and must identify what assumptions the company used to generate the fair value numbers and any related income effects. Companies will want to use Level 1 and 2 measurements as much as possible. In most cases, these valuations should be very reliable, as the fair value measurements are based on market information. In contrast, a company that uses Level 3 measurements extensively must be carefully evaluated to understand the impact these valuations have on the financial statements.

Techniques of Disclosure

Companies should disclose as completely as possible the effect of various contingencies on financial condition, the methods of valuing assets and liabilities, and the company's contracts and agreements. To disclose this pertinent information, companies may use parenthetical explanations, notes, cross-reference and contra items, and supporting schedules.

Parenthetical Explanations

Companies often provide additional information by parenthetical explanations following the item. For example, Illustration 4A.6 shows a parenthetical explanation of the number of shares issued by **Ford Motor Company** on the balance sheet under "Stockholders' Equity."

Ford Motor Company

Stockholders' Equity (in millions)	
Common stock, par value $0.01 per share (1,837 million shares issued)	$18

ILLUSTRATION 4A.6
Parenthetical Disclosure of Shares Issued—Ford Motor Company

- This additional pertinent balance sheet information adds clarity and completeness.
- It has an advantage over a note because it brings the additional information into the **body of the statement** where readers will less likely overlook it.

Companies, however, should avoid lengthy parenthetical explanations, which might be distracting (see **Underlying Concepts**).

Underlying Concepts

The user-specific quality of *understandability* requires accountants to be careful in describing transactions and events.

Cross-Reference and Contra Items

Companies "cross-reference" a direct relationship between an asset and a liability on the balance sheet. For example, as shown in Illustration 4A.7, on December 31, 2025, a company might show the following entries—one listed among the current assets, and the other listed among the current liabilities.

Current Assets (in part)	
Cash on deposit with sinking fund trustee for redemption of bonds payable—see Current liabilities	$800,000
Current Liabilities (in part)	
Bonds payable to be redeemed in 2026—see Current assets	$2,300,000

ILLUSTRATION 4A.7 Cross-Referencing and Contra Items

This cross-reference points out that the company will redeem $2,300,000 of bonds payable currently, for which it has only set aside $800,000. Therefore, it needs additional cash from unrestricted cash, from sales of investments, from profits, or from some other source. Alternatively, the company can show the same information parenthetically.

Another common procedure is to establish contra or adjunct accounts.

- A **contra account** on a balance sheet reduces either an asset, liability, or owners' equity account. Contra accounts provide some flexibility in presenting the financial information. With the use of the Accumulated Depreciation—Equipment account, for example, a reader of the statement can see the original cost of the asset as well as the depreciation to date.
- An **adjunct account**, on the other hand, increases either an asset, liability, or owners' equity account. An example is Premium on Bonds Payable, which, when added to the Bonds Payable account, describes the total bond liability of the company.

Supporting Schedules

Often a company needs a separate schedule to present more detailed information about certain assets or liabilities, as shown in **Illustration 4A.8**.

ILLUSTRATION 4A.8
Disclosure Through Use of Supporting Schedules

Property, plant, and equipment

Land, buildings, equipment, and other fixed assets—net **(see Schedule 3)**	$643,300

Schedule 3
Land, Buildings, Equipment, and Other Fixed Assets

	Total	Land	Buildings	Equip.	Other Fixed Assets
Balance January 1, 2025	$740,000	$46,000	$358,000	$260,000	$76,000
Additions in 2025	161,200		120,000	38,000	3,200
	901,200	46,000	478,000	298,000	79,200
Assets retired or sold in 2025	31,700			27,000	4,700
Balance December 31, 2025	869,500	46,000	478,000	271,000	74,500
Depreciation taken to January 1, 2025	196,000		102,000	78,000	16,000
Depreciation taken in 2025	56,000		28,000	24,000	4,000
	252,000		130,000	102,000	20,000
Depreciation on assets retired in 2025	25,800			22,000	3,800
Depreciation accumulated December 31, 2025	226,200		130,000	80,000	16,200
Book value of assets	$643,300	$46,000	$348,000	$191,000	$58,300

Terminology

The account titles in the general ledger do not necessarily represent the best terminology for balance sheet purposes. Companies often use brief account titles and include technical terms that only accountants understand. But many persons unacquainted with accounting terminology examine balance sheets. Thus, balance sheets should contain descriptions that readers will generally understand and clearly interpret.

For example, companies have used the term "reserve" in differing ways:

- To describe amounts deducted from assets (contra accounts such as accumulated depreciation and allowance for doubtful accounts).
- As a part of the title of contingent or estimated liabilities.
- To describe an appropriation of retained earnings.

Because of the different meanings attached to this term, misinterpretation often resulted from its use. Therefore, the profession has recommended that companies use the word **reserve** only to describe an appropriation of retained earnings. The use of the term in this narrower sense—to describe appropriated retained earnings—has resulted in a better understanding of its significance when it appears in a balance sheet. However, the term "appropriated" appears more logical, and we encourage its use.

For years, the profession has recommended that the use of the word **surplus** be discontinued in balance sheet presentations of stockholders' equity. The use of the terms **capital surplus, paid-in surplus,** and **earned surplus** is confusing. Although condemned by the profession, these terms appear all too frequently in current financial statements.

APPENDIX **4B**

Ratio Analysis—A Reference

LEARNING OBJECTIVE *4

Identify the major types of financial ratios and what they measure.

Analysts and other interested parties can gather qualitative information from financial statements by examining relationships between items on the statements and identifying trends in these relationships. A useful starting point in developing this information is ratio analysis.

- A **ratio** expresses the mathematical relationship between one quantity and another.
- **Ratio analysis** expresses the relationship among pieces of selected financial statement data, in a **percentage**, a **rate**, or a simple **proportion**.

To illustrate, **IBM Corporation** recently had current assets of $46,970 million and current liabilities of $39,798 million. We find the ratio between these two amounts by dividing current assets by current liabilities. The alternative means of expression are:

Percentage: Current assets are 118% of current liabilities.
Rate: Current assets are 1.18 times as great as current liabilities.
Proportion: The relationship of current assets to current liabilities is 1.18:1.

To analyze financial statements, we classify ratios into four types, as follows.

1. **Liquidity ratios.** Measures of the company's short-term ability to pay its maturing obligations.
2. **Activity ratios.** Measures of how effectively the company uses its assets.
3. **Profitability ratios.** Measures of the degree of success or failure of a given company or division for a given period of time.
4. **Coverage ratios.** Measures of the degree of protection for long-term creditors and investors.

Throughout the remainder of the text, we provide ratios to help you understand and interpret the information presented in financial statements. **Illustration 4B.1** presents the ratios that we will use throughout the text. You should find this chart helpful as you examine these ratios in more detail in the following chapters. An appendix to Chapter 23 further discusses financial statement analysis.

ILLUSTRATION 4B.1 A Summary of Financial Ratios

Ratio	Formula	Purpose or Use
Liquidity		
1. **Current ratio**	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Measures short-term debt-paying ability
2. **Quick (acid-test) ratio**	$\frac{\text{Cash + Short-term investments + Accounts receivable (net)}}{\text{Current liabilities}}$	Measures immediate short-term liquidity
3. **Current cash debt coverage**	$\frac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}}$	Measures a company's ability to pay off its current liabilities in a given year from its operations
Activity		
4. **Accounts receivable turnover**	$\frac{\text{Net sales}}{\text{Average net accounts receivable}}$	Measures liquidity of receivables
5. **Inventory turnover**	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Measures liquidity of inventory
6. **Asset turnover**	$\frac{\text{Net sales}}{\text{Average total assets}}$	Measures how efficiently assets are used to generate sales
Profitability		
7. **Profit margin on sales**	$\frac{\text{Net income}}{\text{Net sales}}$	Measures net income generated by each dollar of sales
8. **Return on assets**	$\frac{\text{Net income}}{\text{Average total assets}}$	Measures overall profitability of assets
9. **Return on common stockholders' equity**	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common stockholders' equity}}$	Measures profitability of owners' investment
10. **Earnings per share**	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted-average common shares outstanding}}$	Measures net income earned on each share of common stock
11. **Price-earnings ratio**	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Measures the ratio of the market price per share to earnings
12. **Payout ratio**	$\frac{\text{Cash dividends}}{\text{Net income}}$	Measures percentage of earnings distributed in the form of per share cash dividends
Coverage		
13. **Debt to assets ratio**	$\frac{\text{Total liabilities}}{\text{Total assets}}$	Measures the percentage of total assets provided by creditors
14. **Times interest earned**	$\frac{\text{Net income + Interest expense + Income tax expense}}{\text{Interest expense}}$	Measures ability to meet interest payments as they come due
15. **Cash debt coverage**	$\frac{\text{Net cash provided by operating activities}}{\text{Average total liabilities}}$	Measures a company's ability to repay its total liabilities in a given year from its operations
16. **Book value per share**	$\frac{\text{Common stockholders' equity}}{\text{Outstanding shares}}$	Measures the amount each share would receive if the company were liquidated at the amounts reported on the balance sheet
17. **Free cash flow**	Net cash provided by operating activities − Capital expenditures − Cash dividends	Measures the amount of discretionary cash flow

Review and Practice

Key Terms Review

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*activity ratios 4-33
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Learning Objectives Review

1 Explain the uses, limitations, and content of the balance sheet.

The **balance sheet is useful** because it provides information about the nature and amounts of investments in a company's resources, obligations to creditors, and owners' equity. The balance sheet contributes to financial reporting by providing a basis for (1) computing rates of return, (2) evaluating the capital structure of the enterprise, and (3) assessing the liquidity, solvency, and financial flexibility of the enterprise.

Three **limitations of a balance sheet** are as follows. (1) The balance sheet does not reflect fair value because accountants use a historical cost basis in valuing and reporting most assets and liabilities. (2) Companies must use judgments and estimates to determine certain amounts, such as the collectibility of receivables and the useful life of long-term tangible and intangible assets. (3) The balance sheet omits many items that are of financial value to the business but cannot be recorded objectively, such as human resources, customer base, and reputation.

The **general elements of the balance sheet** are assets, liabilities, and equity. The major classifications of assets are current assets; long-term investments; property, plant, and equipment; intangible assets; and other assets. The major classifications of liabilities are current and long-term liabilities. The balance sheet of a corporation generally classifies owners' equity as capital stock, additional paid-in capital, and retained earnings.

The **format of the balance sheet** is generally in report form. The report form lists liabilities and stockholders' equity directly below assets on the same page.

2 Explain the purpose, content, preparation, and usefulness of the statement of cash flows.

The **primary purpose of a statement of cash flows** is to provide relevant information about a company's cash receipts and cash payments during a period. Reporting the sources, uses, and net change in cash enables financial statement readers to know what is happening to a company's most liquid resource.

In the statement of cash flows, **companies classify the period's cash receipts and cash payments into three different activities**. (1) *Operating activities*: Involve the cash effects of transactions that enter into the determination of net income. (2) *Investing activities*: Include making and collecting loans, and acquiring and disposing of investments (both debt and equity) and of property, plant, and equipment. (3) *Financing activities*: Involve liability and owners' equity items. Financing activities include (a) obtaining capital from owners and providing them with a return on their investment, and (b) borrowing money from creditors and repaying the amounts borrowed.

The **information to prepare the statement of cash flows** usually comes from comparative balance sheets, the current income statement, and selected transaction data. Companies follow four steps to prepare the statement of cash flows from these sources. (1) Determine the net cash provided by (or used in) operating activities. (2) Determine the net cash provided by (or used in) investing and financing activities. (3) Determine the change (increase or decrease) in cash during the period. (4) Reconcile the change in cash with the beginning and ending cash balances.

Creditors examine the statement of cash flows carefully because they are concerned about being paid. The net cash flow provided by operating activities in relation to the company's liabilities is helpful in making this assessment. Two ratios used in this regard are the current cash debt ratio and the cash debt ratio. In addition, the amount of free cash flow provides creditors and stockholders with a picture of the company's financial flexibility.

*3 Describe additional types of information provided.

Four types of information normally are supplemental to account titles and amounts presented in the balance sheet. (1) *Accounting policies:* Explanations of the valuation methods used or the basic assumptions made concerning inventory valuation, depreciation methods, investments in subsidiaries, etc. (2) *Contractual situations:* Explanations of certain restrictions or covenants attached to specific assets or, more likely, to liabilities. (3) *Contingencies:* Material events that have an uncertain outcome. (4) *Fair values:* Disclosures related to fair values, particularly related to financial instruments.

Companies use **three methods to disclose pertinent information in the balance sheet**. (1) *Parenthetical explanations:* Parenthetical information provides additional information or description following the item. A company uses notes if it cannot conveniently show additional explanations or descriptions as parenthetical explanations. (2) *Cross-reference and contra items:* Companies "cross-reference" a direct relationship between an asset and a liability on the balance sheet. (3) *Supporting schedules:* Often a company uses a separate schedule to present more detailed information than just the single summary item shown in the balance sheet. Companies establish contra accounts on a balance sheet to reduce either an asset, liability, or stockholders' equity account.

*4 Identify the major types of financial ratios and what they measure.

Ratios express the mathematical relationship between one quantity and another, expressed as a percentage, a rate, or a proportion. *Liquidity ratios* measure the short-term ability to pay maturing obligations. *Activity* ratios measure the effectiveness of asset usage. *Profitability* ratios measure the success or failure of an enterprise. *Coverage* ratios measure the degree of protection for long-term creditors and investors.

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. How does information from the balance sheet help users of the financial statements?

2. What is meant by solvency? What information in the balance sheet can be used to assess a company's solvency?

3. A recent financial magazine indicated that the airline industry has poor financial flexibility. What is meant by financial flexibility, and why is it important?

4. Discuss at least two situations in which estimates could affect the usefulness of information in the balance sheet.

5. Perez Company reported higher inventories compared to its competitors in a recent year. Discuss this effect on the current ratio (current assets ÷ current liabilities). What does this tell a statement user about Perez Company's liquidity?

6. What is meant by liquidity? Rank the following assets from one to five in order of liquidity.

   a. Goodwill

   b. Inventory

   c. Buildings

   d. Short-term investments

   e. Accounts receivable

7. What are the major limitations of the balance sheet as a source of information?

8. Discuss at least two items that are important to the value of companies like **Intel** or **IBM** but that are not recorded in their balance sheets. What are some reasons why these items are not recorded in the balance sheet?

9. How does separating current assets from property, plant, and equipment in the balance sheet help analysts?

10. In its December 31, 2025, balance sheet Oakley Corporation reported as an asset, "Net notes and accounts receivable, $7,100,000." What other disclosures are necessary?

11. Should available-for-sale securities always be reported as a current asset? Explain.

12. What is the relationship between current assets and current liabilities?

13. The New York Knicks, Inc. sold 10,000 season tickets at $2,000 each. By December 31, 2025, 16 of the 40 home games had been played. What amount should be reported as a current liability at December 31, 2025?

14. What is working capital? How does working capital relate to the operating cycle?

15. In what section of the balance sheet should the following items appear, and what balance sheet terminology would you use?

a. Treasury stock (recorded at cost).

b. Checking account at bank.

c. Land (held as an investment).

d. Sinking fund.

e. Unamortized premium on bonds payable.

f. Copyrights.

g. Pension fund assets.

h. Premium on common stock.

i. Long-term investments (pledged against bank loans payable).

16. Where should the following items be shown on the balance sheet, if shown at all?

a. Allowance for doubtful accounts.

b. Merchandise held on consignment.

c. Advances received on sales contract.

d. Cash surrender value of life insurance.

e. Land.

f. Merchandise out on consignment.

g. Franchises.

h. Accumulated depreciation of equipment.

i. Materials in transit—purchased f.o.b. destination.

17. According to generally accepted accounting principles, what is the balance sheet valuation of each of the following assets?

a. Trade accounts receivable.

b. Land.

c. Inventories.

d. Trading securities.

e. Prepaid expenses.

18. Recall the definition of assets: probable economic benefits obtained or controlled by a particular entity as a result of past transactions or events. Discuss how a leased building might qualify as an asset of the lessee (tenant) under this definition.

19. Kathleen Battle says, "Retained earnings should be reported as an asset, since it is earnings which are reinvested in the business." How would you respond to Battle?

20. The creditors of Chester Company agree to accept promissory notes for the amount of its indebtedness with a proviso that two-thirds of the annual profits must be applied to their liquidation. How should these notes be reported on the balance sheet of the issuing company? Give a reason for your answer.

21. What is the purpose of a statement of cash flows? How does it differ from a balance sheet and an income statement?

22. The net income for the year for Genesis, Inc. is $750,000, but the statement of cash flows reports that the net cash provided by operating activities is $640,000. What might account for the difference?

23. Net income for the year for Carrie, Inc. was $750,000, but the statement of cash flows reports that net cash provided by operating activities was $860,000. What might account for the difference?

24. Differentiate between operating activities, investing activities, and financing activities.

25. Each of the following items must be considered in preparing a statement of cash flows. Indicate where each item is to be reported in the statement, if at all. Assume that net income is reported as $90,000.

a. Accounts receivable increased from $34,000 to $39,000 from the beginning to the end of the year.

b. During the year, 10,000 shares of preferred stock with a par value of $100 per share were issued at $115 per share.

c. Depreciation expense amounted to $14,000, and bond premium amortization amounted to $5,000.

d. Land increased from $10,000 to $30,000.

26. Sergey Co. has net cash provided by operating activities of $1,200,000. Its average current liabilities for the period are $1,000,000, and its average total liabilities are $1,500,000. Comment on the company's liquidity and financial flexibility, given this information.

27. Net income for the year for Tanizaki, Inc. was $750,000, but the statement of cash flows reports that net cash provided by operating activities was $860,000. Tanizaki also reported capital expenditures of $75,000 and paid dividends in the amount of $30,000. Compute Tanizaki's free cash flow.

28. What is the purpose of a free cash flow analysis?

***29.** What are some of the techniques of disclosure for the balance sheet?

30. What is a "Summary of Significant Accounting Policies"?

***31.** What types of contractual obligations must be disclosed in great detail in the notes to the balance sheet? Why do you think these detailed provisions should be disclosed?

***32.** What is the profession's recommendation in regard to the use of the term "surplus"? Explain.

Brief Exercises

BE4.1 (LO 1) Harding Corporation has the following accounts included in its December 31, 2025, trial balance: Accounts Receivable $110,000, Inventory $290,000, Allowance for Doubtful Accounts $8,000, Patents $72,000, Prepaid Insurance $9,500, Accounts Payable $77,000, and Cash $30,000. Prepare the current assets section of the balance sheet, listing the accounts in proper sequence.

BE4.2 (LO 1) Koch Corporation's adjusted trial balance contained the following asset accounts at December 31, 2025: Cash $7,000, Land $40,000, Patents $12,500, Accounts Receivable $90,000, Prepaid Insurance $5,200, Inventory $30,000, Allowance for Doubtful Accounts $4,000, and Equity Investments (to be sold in the next quarter) $11,000. Prepare the current assets section of the balance sheet, listing the accounts in proper sequence.

BE4.3 (LO 1) Included in Outkast Company's December 31, 2025, trial balance are the following accounts: Prepaid Rent $5,200, Debt Investments (to be held to maturity until 2028) $56,000, Unearned Fees $17,000, Land (held for investment) $39,000, and Notes Receivable (long-term) $42,000. Prepare the long-term investments section of the balance sheet.

BE4.4 (LO 1) Lowell Company's December 31, 2025, trial balance includes the following accounts: Inventory $120,000, Buildings $207,000, Accumulated Depreciation—Equipment $19,000, Equipment $190,000, Land (held for investment) $46,000, Accumulated Depreciation—Buildings $45,000, Land $71,000, and Timberland $70,000. Prepare the property, plant, and equipment section of the balance sheet.

BE4.5 (LO 1) Crane Corporation has the following accounts included in its December 31, 2025, trial balance: Equity Investments (to be sold in the next 6 months) $21,000, Goodwill $150,000, Prepaid Insurance $12,000, Patents $220,000, and Franchises $130,000. Prepare the intangible assets section of the balance sheet.

BE4.6 (LO 1) Patrick Corporation's adjusted trial balance contained the following asset accounts at December 31, 2025: Prepaid Rent $12,000, Goodwill $50,000, Franchise Fees Receivable $2,000, Franchises $47,000, Patents $33,000, and Trademarks $10,000. Prepare the intangible assets section of the balance sheet.

BE4.7 (LO 1) Thomas Corporation's adjusted trial balance contained the following liability accounts at December 31, 2025: Bonds Payable (due in 3 years) $100,000, Accounts Payable $72,000, Notes Payable (due in 90 days) $22,500, Salaries and Wages Payable $4,000, and Income Taxes Payable $7,000. Prepare the current liabilities section of the balance sheet.

BE4.8 (LO 1) Included in Adams Company's December 31, 2025, trial balance are the following accounts: Accounts Payable $220,000, Pension Liability $375,000, Discount on Bonds Payable $29,000, Unearned Rent Revenue $41,000, Bonds Payable $400,000, Salaries and Wages Payable $27,000, Interest Payable $12,000, and Income Taxes Payable $29,000. Prepare the current liabilities section of the balance sheet.

BE4.9 (LO 1) Use the information presented in BE4.8 for Adams Company to prepare the long-term liabilities section of the balance sheet.

BE4.10 (LO 1) Hawthorn Corporation's adjusted trial balance contained the following accounts at December 31, 2025: Retained Earnings $120,000, Common Stock $750,000, Bonds Payable $100,000, Paid-in Capital in Excess of Par—Common Stock $200,000, Goodwill $55,000, and Accumulated Other Comprehensive Loss $150,000. Prepare the stockholders' equity section of the balance sheet.

BE4.11 (LO 1) Stowe Company's December 31, 2025, trial balance includes the following accounts: Investment in Common Stock $70,000, Retained Earnings $114,000, Trademarks $31,000, Preferred Stock $152,000, Common Stock $55,000, Deferred Income Taxes $88,000, and Paid-in Capital in Excess of Par—Common Stock $174,000. Prepare the stockholders' equity section of the balance sheet.

BE4.12 (LO 2) Keyser Beverage Company reported the following items in the most recent year.

Net income	$40,000
Dividends paid	5,000
Increase in accounts receivable	10,000
Increase in accounts payable	7,000
Purchase of equipment (capital expenditure)	8,000
Depreciation expense	4,000
Issue of notes payable	20,000

Compute net cash provided by operating activities, the net change in cash during the year, and free cash flow.

BE4.13 (LO 2) Ames Company reported 2025 net income of $151,000. During 2025, accounts receivable increased by $13,000 and accounts payable increased by $9,500. Depreciation expense was $44,000. Prepare the cash flows from operating activities section of the statement of cash flows.

BE4.14 (LO 2) Martinez Corporation engaged in the following cash transactions during 2025.

Sale of land and building	$191,000
Purchase of treasury stock	40,000
Purchase of land	37,000
Payment of cash dividend	95,000
Purchase of equipment	53,000
Issuance of common stock	147,000
Retirement of bonds	100,000

Compute the net cash provided (used) by investing activities.

BE4.15 (LO 2) Use the information presented in BE4.14 for Martinez Corporation to compute the net cash used (provided) by financing activities.

BE4.16 (LO 2) Using the information in BE4.14, determine Martinez's free cash flow, assuming that it reported net cash provided by operating activities of $400,000.

Exercises

E4.1 (LO 1) (Balance Sheet Classifications) Presented below are a number of balance sheet accounts of Deep Blue Something, Inc.

a. Debt Investments.
b. Treasury Stock.
c. Common Stock.
d. Dividends Payable.
e. Accumulated Depreciation—Equipment.
f. Construction in Process.
g. Petty Cash.
h. Interest Payable.
i. Deficit.
j. Equity Investments
k. Income Taxes Payable.
l. Unearned Subscriptions Revenue.
m. Work in Process.
n. Salaries and Wages Payable.

Instructions

For each of the accounts above, indicate the proper balance sheet classification. In the case of borderline items, indicate the additional information that would be required to determine the proper classification.

E4.2 (LO 1) (Classification of Balance Sheet Accounts) Presented below are the captions of Faulk Company's balance sheet.

a. Current assets.
b. Long-term investments.
c. Property, plant, and equipment.
d. Intangible assets.
e. Other assets.
f. Current liabilities.
g. Noncurrent liabilities.
h. Capital stock.
i. Additional paid-in capital.
j. Retained earnings.

Instructions

Indicate by letter where each of the following items would be classified.

1. Preferred stock.
2. Goodwill.
3. Salaries and wages payable.
4. Accounts payable.
5. Buildings.
6. Equity investments (to be sold within one year).
7. Current maturity of long-term debt.
8. Premium on bonds payable.
9. Allowance for doubtful accounts.
10. Accounts receivable.
11. Notes payable (due next year).
12. Supplies.
13. Common stock.
14. Land.
15. Inventory.
16. Prepaid insurance.
17. Bonds payable.
18. Income taxes payable.

E4.3 (LO 1) (Classification of Balance Sheet Accounts) Assume that Fielder Enterprises uses the following headings on its balance sheet.

a. Current assets.
b. Long-term Investments.
c. Property, plant, and equipment.
d. Intangible assets.
e. Other assets.
f. Current liabilities.
g. Long-term liabilities.
h. Capital stock.
i. Paid-in capital in excess of par.
j. Retained earnings.

Instructions

Indicate by letter how each of the following usually should be classified. If an item should appear in a note to the financial statements, use the letter "N" to indicate this fact. If an item need not be reported at all on the balance sheet, use the letter "X."

1. Prepaid insurance.
2. Stock owned in another company.
3. Unearned service revenue.
4. Advances to suppliers.
5. Unearned rent revenue.
6. Preferred stock.
7. Additional paid-in capital on preferred stock.
8. Copyrights.

9. Petty cash fund.
10. Sales taxes payable.
11. Accrued interest on notes receivable.
12. Twenty-year issue of bonds payable that will mature within the next year.
13. Machinery retired from use and held for sale.
14. Fully depreciated machine still in use.
15. Accrued interest on bonds payable.
16. Salaries that company budget shows will be paid to employees within the next year.
17. Discount on bonds payable. (Assume related to bonds payable in item 12.)
18. Accumulated depreciation—buildings.

E4.4 (LO 1) (Preparation of a Classified Balance Sheet) Assume that Denis Savard Inc. has the following accounts at the end of the current year.

1. Common Stock.
2. Discount on Bonds Payable.
3. Treasury Stock (at cost).
4. Notes Payable (short-term).
5. Raw Materials.
6. Equity Investments (long-term).
7. Unearned Rent Revenue.
8. Work in Process.
9. Copyrights.
10. Buildings.
11. Notes Receivable (short-term).
12. Cash.
13. Salaries and Wages Payable.
14. Accumulated Depreciation—Buildings.
15. Restricted Cash for Plant Expansion.
16. Land Held for Future Plant Site.
17. Allowance for Doubtful Accounts.
18. Retained Earnings.
19. Paid-in Capital in Excess of Par—Common Stock.
20. Unearned Subscriptions Revenue.
21. Receivables—Officers (due in one year).
22. Inventory (finished goods).
23. Accounts Receivable.
24. Bonds Payable (due in 4 years).

Instructions

Prepare a classified balance sheet in good form. (No monetary amounts are necessary.)

E4.5 (LO 1) (Preparation of a Corrected Balance Sheet) Uhura Company has decided to expand its operations. The bookkeeper recently completed the following balance sheet in order to obtain additional funds for expansion.

Uhura Company Balance Sheet For the Year Ended 2025	
Current assets	
Cash	$230,000
Accounts receivable (net)	340,000
Inventory (lower-of-cost-or-net realizable value)	401,000
Equity investments (to be sold in the next year)—at cost (fair value $120,000)	140,000
Property, plant, and equipment	
Buildings (net)	570,000
Equipment (net)	160,000
Land held for future use	175,000
Intangible assets	
Goodwill	80,000
Held-to maturity debt investment	90,000
Prepaid expenses	12,000
Current liabilities	
Accounts payable	135,000
Notes payable (due next year)	125,000
Pension obligation	82,000
Rent payable	49,000
Premium on bonds payable	53,000
Long-term liabilities	
Bonds payable	500,000
Stockholders' equity	
Common stock, $1.00 par, authorized 400,000 shares, issued 290,000	290,000
Paid-in capital in excess of par	160,000
Retained earnings	?

Instructions

Prepare a revised balance sheet given the available information. Assume that the accumulated depreciation balance for the buildings is $160,000 and for the equipment, $105,000. The allowance for doubtful accounts has a balance of $17,000. The pension obligation is considered a long-term liability.

E4.6 (LO 1) (Corrections of a Balance Sheet) The bookkeeper for Geronimo Company has prepared the following balance sheet as of July 31, 2025.

Geronimo Company
Balance Sheet
As of July 31, 2025

Cash	$ 69,000	Notes and accounts payable	$ 44,000
Accounts receivable (net)	40,500	Long-term liabilities	75,000
Inventory	60,000	Stockholders' equity	155,500
Equipment (net)	84,000		$274,500
Patents	21,000		
	$274,500		

The following additional information is provided.

1. Cash includes $1,200 in a petty cash fund and $15,000 invested in a 24-month certificate of deposit.
2. The net accounts receivable balance is comprised of the following two items: (a) accounts receivable $44,000 and (b) allowance for doubtful accounts $3,500.
3. Inventory costing $5,300 was shipped out on consignment on July 31, 2025. The ending inventory balance does not include the consigned goods. Receivables in the amount of $5,300 were recognized on these consigned goods.
4. Equipment had a cost of $112,000 and an accumulated depreciation balance of $28,000.
5. Income taxes payable of $6,000 were accrued on July 31. Geronimo Company, however, had set up a cash fund to meet this obligation. This cash fund was not included in the cash balance but was offset against the income taxes payable amount.

Instructions

Prepare a corrected classified balance sheet as of July 31, 2025, from the available information, adjusting the account balances using the additional information.

E4.7 (LO 1) Excel (Current Assets Section of the Balance Sheet) Presented below are selected accounts of Yasunari Kawabata Company at December 31, 2025.

Inventory (finished goods)	$ 52,000	Cost of Goods Sold	$2,100,000
Unearned Service Revenue	90,000	Notes Receivable	40,000
Equipment	253,000	Accounts Receivable	161,000
Inventory (work in process)	34,000	Inventory (raw materials)	207,000
Cash	37,000	Supplies Expense	60,000
Debt Investments (trading)	31,000	Allowance for Doubtful Accounts	12,000
Customer Advances	36,000	Licenses	18,000
Restricted Cash for Plant Expansion	50,000	Additional Paid-in Capital	88,000
		Treasury Stock	22,000

The following additional information is available.

1. Inventories are valued at lower-of-cost-or-market using LIFO.
2. Equipment is recorded at cost. Accumulated depreciation, computed on a straight-line basis, is $50,600.
3. The short-term investments have a fair value of $29,000.
4. The notes receivable are due April 30, 2027, with interest receivable every April 30. The notes bear interest at 6%. (*Hint:* Accrue interest due on December 31, 2025.)
5. The allowance for doubtful accounts applies to the accounts receivable. Accounts receivable of $50,000 are pledged as collateral on a bank loan.
6. Licenses are recorded net of accumulated amortization of $14,000.
7. Treasury stock is recorded at cost.

Instructions

Prepare the current assets section of Yasunari Kawabata Company's December 31, 2025, balance sheet, with appropriate disclosures.

E4.8 (LO 1) (Current vs. Long-term Liabilities) Frederic Chopin Corporation is preparing its December 31, 2025, balance sheet. The following items may be reported as either a current or long-term liability.

1. On December 15, 2025, Chopin declared a cash dividend of $2.50 per share to stockholders of record on December 31. The dividend is payable on January 15, 2026. Chopin has issued 1,000,000 shares of common stock, of which 50,000 shares are held in treasury.
2. At December 31, bonds payable of $100,000,000 are outstanding. The bonds pay 12% interest every September 30 and mature in installments of $25,000,000 every September 30, beginning September 30, 2026.
3. At December 31, 2024, customer advances were $12,000,000. During 2025, Chopin collected $30,000,000 of customer advances; advances of $25,000,000 should be recognized in income.

Instructions

For each item above, indicate the dollar amounts to be reported as a current liability and as a long-term liability, if any.

E4.9 (LO 1) (Current Assets and Current Liabilities) The current assets and current liabilities sections of the balance sheet of Allessandro Scarlatti Company appear as follows.

Allessandro Scarlatti Company
Balance Sheet (partial)
December 31, 2025

Cash		$ 40,000	Accounts payable	$ 61,000
Accounts receivable	$89,000		Notes payable	67,000
Less: Allowance for				$128,000
doubtful accounts	7,000	82,000		
Inventory		171,000		
Prepaid expenses		9,000		
		$302,000		

The following errors in the corporation's accounting have been discovered:

1. January 2026 cash disbursements entered as of December 2025 included payments of accounts payable in the amount of $39,000, on which a cash discount of 2% was taken.
2. The inventory included $27,000 of merchandise that had been received at December 31 but for which no purchase invoices had been received or entered. Of this amount, $12,000 had been received on consignment; the remainder was purchased f.o.b. destination, terms 2/10, n/30.
3. Sales for the first four days in January 2026 in the amount of $30,000 were entered in the sales journal as of December 31, 2025. Of these, $21,500 were sales on account and the remainder were cash sales.
4. Cash, not including cash sales, collected in January 2026 and entered as of December 31, 2025, totaled $35,324. Of this amount, $23,324 was received on account after cash discounts of 2% had been deducted; the remainder represented the proceeds of a bank loan.

Instructions

a. Restate the current assets and current liabilities sections of the balance sheet in accordance with good accounting practice. (Assume that both accounts receivable and accounts payable are recorded gross.)

b. State the net effect of your adjustments on Allessandro Scarlatti Company's retained earnings balance.

E4.10 (LO 1) (Current Liabilities) Norma Smith is the controller of Baylor Corporation and is responsible for the preparation of the year-end financial statements. The following transactions occurred during the year.

a. Bonuses to key employees based on net income for 2025 are estimated to be $150,000.

b. On December 1, 2025, the company borrowed $600,000 at 8% per year. Interest is paid quarterly.

c. Accounts receivable at December 31, 2025, is $10,000,000. An aging analysis indicates that Baylor's expense provision for doubtful accounts is estimated to be 3% of the receivables balance.

d. On December 15, 2025, the company declared a $2.00 per share dividend on the 40,000 shares of common stock outstanding, to be paid on January 5, 2026.

e. During the year, customer advances of $160,000 were received; $50,000 of this amount was earned by December 31, 2025.

Instructions

For each item above, indicate the dollar amount to be reported as a current liability as of December 31, 2025. If a liability is not reported, explain why.

E4.11 (LO 1) Excel (Balance Sheet Preparation) Presented below is the adjusted trial balance of Kelly Corporation at December 31, 2025.

	Debit	Credit
Cash	$?	
Supplies	1,200	
Prepaid Insurance	1,000	
Equipment	48,000	
Accumulated Depreciation—Equipment		$ 4,000
Trademarks	950	
Accounts Payable		10,000
Salaries and Wages Payable		500
Unearned Service Revenue		2,000
Bonds Payable (due 2032)		9,000
Common Stock		10,000
Retained Earnings		25,000
Service Revenue		10,000
Salaries and Wages Expense	9,000	
Insurance Expense	1,400	
Rent Expense	1,200	
Interest Expense	900	
Total	$?	$?

Additional information:

1. Net loss for the year was $2,500.
2. No dividends were declared during 2025.

Instructions

Prepare a classified balance sheet as of December 31, 2025.

E4.12 (LO 1) (Preparation of a Balance Sheet) Presented below is the trial balance of Scott Butler Corporation at December 31, 2025.

	Debit	Credit
Cash	$ 197,000	
Sales Revenue		$ 8,100,000
Debt Investments (trading) (at cost, $145,000)	153,000	
Cost of Goods Sold	4,800,000	
Debt Investments (long-term)	299,000	
Equity Investments (long-term)	277,000	
Notes Payable (short-term)		90,000
Accounts Payable		455,000
Selling Expenses	2,000,000	
Investment Revenue		63,000
Land	260,000	
Buildings	1,040,000	
Dividends Payable		136,000
Accrued Liabilities		96,000
Accounts Receivable	435,000	
Accumulated Depreciation—Buildings		152,000
Allowance for Doubtful Accounts		25,000
Administrative Expenses	900,000	

(continues)

Interest Expense	211,000	
Inventory	597,000	
Gain		80,000
Notes Payable (long-term)		900,000
Equipment	600,000	
Bonds Payable		1,000,000
Accumulated Depreciation—Equipment		60,000
Franchises	160,000	
Common Stock ($5 par)		1,000,000
Treasury Stock	191,000	
Patents	195,000	
Retained Earnings		78,000
Paid-in Capital in Excess of Par		80,000
Totals	$12,315,000	$12,315,000

Instructions

Prepare a balance sheet at December 31, 2025, for Scott Butler Corporation. (Ignore income taxes.)

E4.13 (LO 2) (Statement of Cash Flows—Classifications) The major classifications of activities reported in the statement of cash flows are operating, investing, and financing. Classify each of the transactions listed below as:

1. Operating activity—add to net income.
2. Operating activity—deduct from net income.
3. Investing activity.
4. Financing activity.
5. Reported as significant noncash activity.

The transactions are as follows.

a. Issuance of common stock.
b. Purchase of land and building.
c. Redemption of bonds.
d. Sale of equipment.
e. Depreciation of machinery.
f. Amortization of patent.
g. Issuance of bonds for plant assets.
h. Payment of cash dividends.
i. Exchange of furniture for office equipment.
j. Purchase of treasury stock.
k. Loss on sale of equipment.
l. Increase in accounts receivable during the year.
m. Decrease in accounts payable during the year.

E4.14 (LO 2) (Preparation of a Statement of Cash Flows) The comparative balance sheets of Constantine Cavamanlis Inc. at the beginning and the end of the year 2025 are as follows.

Constantine Cavamanlis Inc.
Balance Sheets

Assets	**Dec. 31, 2025**	**Jan. 1, 2025**	**Inc./Dec.**
Cash	$ 45,000	$ 13,000	$32,000 Inc.
Accounts receivable	91,000	88,000	3,000 Inc.
Equipment	39,000	22,000	17,000 Inc.
Less: Accumulated depreciation—equipment	17,000	11,000	6,000 Inc.
Total	$158,000	$112,000	
Liabilities and Stockholders' Equity			
Accounts payable	$ 20,000	$ 15,000	$ 5,000 Inc.
Common stock	100,000	80,000	20,000 Inc.
Retained earnings	38,000	17,000	21,000 Inc.
Total	$158,000	$112,000	

Net income of $44,000 was reported, and dividends of $23,000 were paid in 2025. New equipment was purchased and none was sold.

Instructions

Prepare a statement of cash flows for the year 2025.

E4.15 (LO 2) (Preparation of a Statement of Cash Flows) The following is a condensed version of the comparative balance sheets for Zubin Mehta Corporation for the last two years at December 31.

	2025	2024
Cash	$177,000	$ 78,000
Accounts receivable	180,000	185,000
Investments	52,000	74,000
Equipment	298,000	240,000
Accumulated depreciation—equipment	(106,000)	(89,000)
Current liabilities	134,000	151,000
Common stock	160,000	160,000
Retained earnings	307,000	177,000

Additional information:
Investments were sold at a loss of $10,000; no equipment was sold; cash dividends paid were $30,000; and net income was $160,000.

Instructions

a. Prepare a statement of cash flows for 2025 for Zubin Mehta Corporation.

b. Determine Zubin Mehta Corporation's free cash flow.

E4.16 (LO 2) (Preparation of a Statement of Cash Flows) A comparative balance sheet for Shabbona Corporation is presented as follows.

	December 31	
	2025	2024
Assets		
Cash	$ 73,000	$ 22,000
Accounts receivable	82,000	66,000
Inventory	180,000	189,000
Land	71,000	110,000
Equipment	260,000	200,000
Accumulated depreciation—equipment	(69,000)	(42,000)
Total	$597,000	$545,000
Liabilities and Stockholders' Equity		
Accounts payable	$ 34,000	$ 47,000
Bonds payable	150,000	200,000
Common stock ($1 par)	214,000	164,000
Retained earnings	199,000	134,000
Total	$ 597,000	$ 545,000

Additional information:

1. Net income for 2025 was $125,000. No gains or losses were recorded in 2020.
2. Cash dividends of $60,000 were declared and paid.
3. Bonds payable amounting to $50,000 were retired through issuance of common stock.

Instructions

a. Prepare a statement of cash flows for 2025 for Shabbona Corporation.

b. Determine Shabbona Corporation's current cash debt coverage, cash debt coverage, and free cash flow. Comment on its liquidity and financial flexibility.

E4.17 (LO 1, 2) (Preparation of a Statement of Cash Flows and a Balance Sheet) Grant Wood Corporation's balance sheet at the end of 2024 included the following items.

Current assets (Cash $82,000)	$235,000	Current liabilities	$150,000
Land	30,000	Bonds payable	100,000
Buildings	120,000	Common stock	180,000
Equipment	90,000	Retained earnings	44,000
Accum. depr.—buildings	(30,000)	Total	$474,000
Accum. depr.—equipment	(11,000)		
Patents	40,000		
Total	$474,000		

The following information is available for 2025.

1. Net income was $55,000.
2. Equipment (cost $20,000 and accumulated depreciation $8,000) was sold for $10,000.
3. Depreciation expense was $4,000 on the building and $9,000 on equipment.
4. Patent amortization was $2,500.
5. Current assets other than cash increased by $29,000. Current liabilities increased by $13,000.
6. An addition to the building was completed at a cost of $27,000.
7. A long-term investment in stock was purchased for $16,000.
8. Bonds payable of $50,000 were issued.
9. Cash dividends of $30,000 were declared and paid.
10. Treasury stock was purchased at a cost of $11,000.

Instructions

(Show only totals for current assets and current liabilities.)

a. Prepare a statement of cash flows for 2025.

b. Prepare a balance sheet at December 31, 2025.

E4.18 (LO 2) (Preparation of a Statement of Cash Flows, Analysis) The comparative balance sheets of Madrasah Corporation at the beginning and end of the year 2025 are as follows.

Madrasah Corporation
Balance Sheets

	Dec. 31, 2025	Jan. 1, 2025	Inc./Dec.
Assets			
Cash	$ 20,000	$ 13,000	$ 7,000 Inc.
Accounts receivable	106,000	88,000	18,000 Inc.
Equipment	39,000	22,000	17,000 Inc.
Less: Accumulated depreciation—equipment	17,000	11,000	6,000 Inc.
Total	$148,000	$112,000	
Liabilities and Stockholders' Equity			
Accounts payable	$ 20,000	$ 15,000	$ 5,000 Inc.
Common stock	100,000	80,000	20,000 Inc.
Retained earnings	28,000	17,000	11,000 Inc.
Total	$148,000	$112,000	

Net income of $44,000 was reported, and dividends of $33,000 were paid in 2025. New equipment was purchased and none was sold.

Instructions

a. Prepare a statement of cash flows for the year 2025.

b. Compute the current ratio (current assets ÷ current liabilities) as of January 1, 2025, and December 31, 2025, and compute free cash flow for the year 2025.

c. In light of the analysis in (b), comment on Madrasah's liquidity and financial flexibility.

Problems

P4.1 (LO 1) (Preparation of a Classified Balance Sheet, Periodic Inventory) Presented below is a list of accounts in alphabetical order.

Accounts Receivable
Accumulated Depreciation—Buildings
Accumulated Depreciation—Equipment
Accumulated Other Comprehensive Income
Advances to Employees
Advertising Expense
Allowance for Doubtful Accounts
Bond Sinking Fund
Buildings
Cash (in bank)
Cash (on hand)
Cash Surrender Value of Life Insurance
Commission Expense
Common Stock
Interest Receivable
Inventory—Beginning

(continues)

Bonds Payable	Inventory—Ending
Land	Prepaid Rent
Land for Future Plant Site	Purchase Returns and Allowances
Loss from Flood	Purchases
Notes Payable (due next year)	Retained Earnings
Paid-in Capital in Excess of Par—Preferred Stock	Salaries and Wages Expense (sales)
Patents	Salaries and Wages Payable
Payroll Taxes Payable	Sales Discounts
Pension Liability	Sales Revenue
Petty Cash	Treasury Stock (at cost)
Preferred Stock	Unearned Subscriptions Revenue
Premium on Bonds Payable	

Instructions

Prepare a classified balance sheet in good form. (No monetary amounts are to be shown.)

P4.2 (LO 1) Excel (Balance Sheet Preparation) Presented below are a number of balance sheet items for Montoya, Inc. for the current year, 2025.

Goodwill	$ 125,000	Accumulated depreciation—equipment	$ 292,000
Payroll taxes payable	177,591	Inventory	239,800
Bonds payable	300,000	Rent payable (short-term)	45,000
Discount on bonds payable	15,000	Income taxes payable	98,362
Cash	360,000	Rent payable (long-term)	480,000
Land	480,000	Common stock, $1 par value	200,000
Notes receivable	445,700	Preferred stock, $10 par value	150,000
Notes payable (to banks)	265,000	Prepaid expenses	87,920
Accounts payable	490,000	Equipment	1,470,000
Retained earnings	?	Debt investments (trading)	121,000
Income taxes receivable	97,630	Accumulated depreciation—buildings	270,200
Notes payable (long-term)	1,600,000	Buildings	1,640,000

Instructions

Prepare a classified balance sheet in good form. Common stock authorized was 400,000 shares, and preferred stock authorized was 20,000 shares. Assume that notes receivable and notes payable are short-term, unless stated otherwise. Cost and fair value of debt investments (trading) are the same.

P4.3 (LO 1) (Balance Sheet Adjustment and Preparation) The post-closing trial balance of Eastwood Company and other related information for the year 2025 are presented as follows.

Eastwood Company
Post-Closing Trial Balance
December 31, 2025

	Debit	Credit
Cash	$ 41,000	
Accounts Receivable	163,500	
Allowance for Doubtful Accounts		$ 8,700
Prepaid Insurance	5,900	
Inventory	208,500	
Equity Investments (long-term)	339,000	
Land	85,000	
Construction in Process (building)	124,000	
Patents	36,000	
Equipment	400,000	
Accumulated Depreciation—Equipment		240,000
Discount on Bonds Payable	20,000	
Accounts Payable		148,000
Accrued Liabilities		49,200
Notes Payable		94,000
Bonds Payable		200,000
Common Stock		500,000
Paid-in Capital in Excess of Par—Common Stock		45,000
Retained Earnings		138,000
	$1,422,900	$1,422,900

Additional information:

1. The LIFO method of inventory value is used.
2. The cost and fair value of the long-term investments that consist of stocks (with ownership less than 20% of total shares) are the same.
3. The amount of the Construction in Progress account represents the costs expended to date on a building in the process of construction. (The company rents factory space at the present time.) The land on which the building is being constructed cost $85,000, as shown in the trial balance.
4. The patents were purchased by the company at a cost of $40,000 and are being amortized on a straight-line basis.
5. Of the discount on bonds payable, $2,000 will be amortized in 2026.
6. The notes payable represent bank loans that are secured by long-term investments carried at $120,000. These bank loans are due in 2026.
7. The bonds payable bear interest at 8% payable every December 31, and are due January 1, 2036.
8. 600,000 shares of common stock of a par value of $1 were authorized, of which 500,000 shares were issued and outstanding.

Instructions

Prepare a balance sheet as of December 31, 2025, so that all important information is fully disclosed.

P4.4 (LO 1) Groupwork (Preparation of a Corrected Balance Sheet) The balance sheet of Kishwaukee Corporation as of December 31, 2025, is as follows.

Kishwaukee Corporation Balance Sheet December 31, 2025	
Assets	
Goodwill (Note 2)	$ 120,000
Buildings (Note 1)	1,640,000
Inventory	312,100
Land	950,000
Accounts receivable	170,000
Treasury stock (50,000 shares)	87,000
Cash on hand	175,900
Assets allocated to trustee for plant expansion	
Cash in bank	70,000
Debt investments (held-to-maturity)	138,000
	$3,663,000
Equities	
Notes payable (Note 3)	$ 600,000
Common stock, authorized and issued, 1,000,000 shares, no par	1,150,000
Retained earnings	858,000
Appreciation capital (Note 1)	570,000
Income taxes payable	75,000
Reserve for depreciation recorded to date on the building	410,000
	$3,663,000

Note 1: Buildings are stated at cost, except for one building that was recorded at appraised value. The excess of appraisal value over cost was $570,000. Depreciation has been recorded based on cost.
Note 2: Goodwill in the amount of $120,000 was recognized because the company believed that book value was not an accurate representation of the fair value of the company. The gain of $120,000 was credited to Retained Earnings.
Note 3: Notes payable are long-term except for the current installment due of $100,000.

Instructions

Prepare a corrected classified balance sheet in good form. The notes above are for information only.

P4.5 (LO 1) Groupwork (Balance Sheet Adjustment and Preparation) Presented below is the balance sheet of Sargent Corporation for the current year, 2025.

Sargent Corporation Balance Sheet December 31, 2025			
Current assets	$ 485,000	Current liabilities	$ 380,000
Investments	640,000	Long-term liabilities	1,000,000
Property, plant, and equipment	1,720,000	Stockholders' equity	1,770,000
Intangible assets	305,000		$3,150,000
	$3,150,000		

The following information is presented.

1. The current assets section includes cash $150,000, accounts receivable $170,000 less $10,000 for allowance for doubtful accounts, inventories $180,000, and unearned rent revenue $5,000. Inventory is stated on the lower-of-FIFO-cost-or-net realizable value.
2. The investments section includes the cash surrender value of a life insurance contract $40,000; investments in common stock, short-term $80,000 and long-term $270,000; and bond sinking fund $250,000. The cost and fair value of investments in common stock are the same.
3. Property, plant, and equipment includes buildings $1,040,000 less accumulated depreciation $360,000, equipment $450,000 less accumulated depreciation $180,000, land $500,000, and land held for future use $270,000.
4. Intangible assets include a franchise $165,000, goodwill $100,000, and discount on bonds payable $40,000.
5. Current liabilities include accounts payable $140,000, notes payable—short-term $80,000 and long-term $120,000, and income taxes payable $40,000.
6. Long-term liabilities are composed solely of 7% bonds payable due 2033.
7. Stockholders' equity has preferred stock, no par value, authorized 200,000 shares, issued 70,000 shares for $450,000; and common stock, $1 par value, authorized 400,000 shares, issued 100,000 shares at an average price of $10. In addition, the corporation has retained earnings of $320,000.

Instructions

Prepare a balance sheet in good form, adjusting the amounts in each balance sheet classification as affected by the information given above.

P4.6 (LO 1, 2) Excel (Preparation of a Statement of Cash Flows and a Balance Sheet) Lansbury Inc. had the following balance sheet at December 31, 2024.

Lansbury Inc. Balance Sheet December 31, 2024			
Cash	$ 20,000	Accounts payable	$ 30,000
Accounts receivable	21,200	Notes payable (long-term)	41,000
Investments	32,000	Common stock	100,000
Plant assets (net)	81,000	Retained earnings	23,200
Land	40,000		$194,200
	$194,200		

During 2025, the following occurred.

1. Lansbury Inc. sold part of its debt investment portfolio for $15,000. This transaction resulted in a gain of $3,400 for the firm. The company classifies these investments as available-for-sale.
2. A tract of land was purchased for $13,000 cash.
3. Long-term notes payable in the amount of $16,000 were retired before maturity by paying $16,000 cash.
4. An additional $20,000 in common stock was issued at par.
5. Dividends of $8,200 were declared and paid to stockholders.
6. Net income for 2025 was $32,000 after allowing for depreciation of $11,000.
7. Land was purchased through the issuance of $35,000 in bonds.
8. At December 31, 2025, Cash was $37,000, Accounts Receivable was $41,600, and Accounts Payable remained at $30,000.

Instructions

a. Prepare a statement of cash flows for 2025.

b. Prepare an unclassified balance sheet as it would appear at December 31, 2025.

c. How might the statement of cash flows help the user of the financial statements? Compute two cash flow ratios.

P4.7 (LO 1, 2) Groupwork (Preparation of a Statement of Cash Flows and Balance Sheet) Aero Inc. had the following balance sheet at December 31, 2024.

Aero Inc.
Balance Sheet
December 31, 2024

Cash	$ 20,000	Accounts payable	$ 30,000
Accounts receivable	21,200	Bonds payable	41,000
Investments	32,000	Common stock	100,000
Plant assets (net)	81,000	Retained earnings	23,200
Land	40,000		$194,200
	$194,200		

During 2025, the following occurred.

1. Aero liquidated its available-for-sale debt investment portfolio at a loss of $5,000.
2. A tract of land was purchased for $38,000.
3. An additional $30,000 in common stock was issued at par.
4. Dividends totaling $10,000 were declared and paid to stockholders.
5. Net income for 2025 was $35,000, including $12,000 in depreciation expense.
6. Land was purchased through the issuance of $30,000 in additional bonds.
7. At December 31, 2025, Cash was $70,200, Accounts Receivable was $42,000, and Accounts Payable was $40,000.

Instructions

a. Prepare a statement of cash flows for the year 2025 for Aero.

b. Prepare the unclassified balance sheet as it would appear at December 31, 2025.

c. Compute Aero's free cash flow and current cash debt coverage for 2025.

d. Use the analysis of Aero to illustrate how information in the balance sheet and statement of cash flows helps the user of the financial statements.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ4.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the related information in the annual report to answer the following questions.

a. What balance sheet format did P&G adopt?

b. Identify the various techniques of disclosure P&G might have used to disclose additional pertinent financial information. Which technique does it use in its financials?

c. In what classifications are P&G's investments reported? What valuation basis does P&G use to report its investments? How much working capital did P&G have on June 30, 2020? On June 30, 2019?

d. What were P&G's cash flows from its operating, investing, and financing activities for 2020? What were its trends in net cash provided by operating activities over the period 2018–2020? Explain why the change in accounts payable and in accrued and other liabilities is added to net income to arrive at net cash provided by operating activities.

e. Compute P&G's (1) current cash debt coverage, (2) cash debt coverage, and (3) free cash flow for 2020. What do these ratios indicate about P&G's financial condition?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ4.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What format(s) did these companies use to present their balance sheets?

b. How much working capital did each of these companies have at the end of 2020? Speculate as to their rationale for the amount of working capital they maintain.

c. What are the companies' annual and 3-year (2018–2020) growth rates in total assets and long-term debt?

d. What were these two companies' trends in net cash provided by operating activities over the period 2018–2020?

e. Compute both companies' (1) current cash debt coverage, (2) cash debt coverage, and (3) free cash flow. What do these ratios indicate about the financial condition of the two companies?

Financial Statement Analysis Case: Uniroyal Technology Corporation (UTC)

UYJ4.3 **Uniroyal Technology Corporation (UTC)**, with corporate offices in Sarasota, Florida, is organized into three operating segments. The high-performance plastics segment is responsible for research, development, and manufacture of a wide variety of products, including orthopedic braces, graffiti-resistant seats for buses and airplanes, and a static-resistant plastic used in the central processing units of microcomputers. The coated fabrics segment manufactures products such as automobile seating, door and instrument panels, and specialty items such as waterproof seats for personal watercraft and stain-resistant, easy-cleaning upholstery fabrics. The foams and adhesives segment develops and manufactures products used in commercial roofing applications.

The following items relate to operations in a recent year.

1. Serious pressure was placed on profitability by sharply increasing raw material prices. Some raw materials increased in price 50% during the past year. Cost containment programs were instituted and product prices were increased whenever possible, which resulted in profit margins actually improving over the course of the year.
2. The company entered into a revolving credit agreement, under which UTC may borrow the lesser of $15,000,000 or 80% of eligible accounts receivable. At the end of the year, approximately $4,000,000 was outstanding under this agreement. The company plans to use this line of credit in the upcoming year to finance operations and expansion.

Instructions

a. Should investors be informed of raw materials price increases, such as described in item 1? Does the fact that the company successfully met the challenge of higher prices affect the answer? Explain.

b. How should the information in item 2 be presented in the financial statements of UTC?

Financial Statement Analysis Case: Sherwin-Williams

UYJ4.4 **Sherwin-Williams**, based in Cleveland, Ohio, manufactures a wide variety of paint and other coatings, which are marketed through its specialty stores and in other retail outlets. The company also manufactures paint for automobiles. The Automotive Division has had financial difficulty. During a recent year, five branch locations of the Automotive Division were closed, and new management was put in place for the branches remaining.

The following titles were shown on Sherwin-Williams's balance sheet for that year.

Accounts payable
Accounts receivable, less allowance
Accrued taxes
Employee compensation payable
Finished goods inventories
Intangibles and other assets
Land
Long-term debt
Machinery and equipment
Other accruals
Other capital
Buildings
Cash and cash equivalents
Common stock
Other current assets
Other long-term liabilities
Postretirement obligations other than pensions
Retained earnings
Short-term investments
Taxes payable
Work in process and raw materials inventories

Instructions

a. Organize the accounts in the general order in which they would have been presented in a classified balance sheet.

b. When several of the branch locations of the Automotive Division were closed, what balance sheet accounts were most likely affected? Did the balance in those accounts decrease or increase?

Financial Statement Analysis Case: Deere & Company

UYJ4.5 Presented below is the SEC-mandated disclosure of contractual obligations provided by **Deere & Company** in a recent annual report. Deere & Company reported current assets of $50,060 and total current liabilities of $21,394 at year-end. (All dollars are in millions.)

Aggregate Contractual Obligations
The payment schedule for the company's contractual obligations at year-end in millions of dollars is as follows:

	Total	Less than 1 year	1–3 years	4 and 5 years	More than 5 years
Debt					
Equipment operations	$ 5,091	$ 434	$ 270	$ 775	$3,612
Financial services	31,692	9,962	11,477	6,578	3,675
Total	36,783	10,396	11,747	7,353	7,287
Interest on debt	4,777	609	1,069	745	2,354
Accounts payable	2,743	2,611	90	39	3
Capital leases	87	39	42	4	2
Purchasing obligations	3,007	2,970	37	—	—
Operating leases	371	121	134	70	46
Total	$47,768	$16,746	$13,119	$8,211	$9,692

Instructions

a. Compute Deere & Company's working capital and current ratio (current assets ÷ current liabilities) with and without the off-balance-sheet contractual obligations reported in the schedule.

b. Briefly discuss how the information provided in the contractual obligation disclosure would be useful in evaluating Deere & Company for loans (1) due in one year and (2) due in five years.

Financial Statement Analysis Case: Amazon.com

UYJ4.6 The incredible growth of **Amazon.com** has put fear into the hearts of traditional retailers. Amazon's stock price has soared to amazing levels. However, it is often pointed out in the financial press that it took the company several years to report its first profit. The following financial information is taken from a recent annual report.

($ in millions)	Current Year	Prior Year
Current assets	$31,327	$24,625
Total assets	54,505	40,159
Current liabilities	28,089	22,980
Total liabilities	43,764	30,413
Cash provided by operations	6,842	5,475
Capital expenditures	4,893	3,444
Dividends paid	—	—
Net income (loss)	(241)	274
Sales	88,988	74,452

Instructions

a. Calculate free cash flow for Amazon for the current and prior years, and discuss its ability to finance expansion from internally generated cash. At one time, Amazon had avoided purchasing large warehouses. Instead, it used those of others. It is possible, however, that in order to increase customer satisfaction the company could build its own warehouses. How might your impression of its ability to finance expansion change?

b. Discuss any potential implications of the change in Amazon's cash provided by operations from the prior year to the current year.

Accounting, Analysis, and Principles

UYJ4.7 Early in January 2026, Hopkins Company is preparing for a meeting with its bankers to discuss a loan request. Its bookkeeper provided the following accounts and balances at December 31, 2025.

	Debit	Credit
Cash	$ 75,000	
Accounts Receivable (net)	38,500	
Inventory	65,300	
Equipment (net)	84,000	
Patents	15,000	
Notes and Accounts Payable		$ 52,000
Notes Payable (due 2027)		75,000
Common Stock		100,000
Retained Earnings		50,800
	$277,800	$277,800

Except for the following items, Hopkins has recorded all adjustments in its accounts.

1. Cash includes $500 petty cash and $15,000 in a bond sinking fund.
2. Net accounts receivable is comprised of $52,000 in accounts receivable and $13,500 in allowance for doubtful accounts.
3. Equipment had a cost of $112,000 and accumulated depreciation of $28,000.
4. On January 8, 2026, one of Hopkins' customers declared bankruptcy. At December 31, 2025, this customer owed Hopkins $9,000.

Accounting

Prepare a December 31, 2025, balance sheet for Hopkins Company.

Analysis

Hopkins' bank is considering granting an additional loan in the amount of $45,000, which will be due December 31, 2026. How can the information in the balance sheet provide useful information to the bank about Hopkins' ability to repay the loan?

Principles

In the upcoming meeting with the bank, Hopkins plans to provide additional information about the fair value of its equipment and some internally generated intangible assets related to its customer lists. This information indicates that Hopkins has significant unrealized gains on these assets, which are not reflected on the balance sheet. What objections is the bank likely to raise about the usefulness of this information in evaluating Hopkins for the loan renewal?

Developing Your Professional Skills

Critical-Thinking Cases

CT4.1 (LO 1) (Reporting the Financial Effects of Varied Transactions) In an examination of Arenes Corporation as of December 31, 2025, you have learned that the following situations exist. No entries have been made in the accounting records for these items.

1. The corporation erected its present factory building in 2009. Depreciation was calculated by the straight-line method, using an estimated life of 35 years. Early in 2025, the board of directors conducted a careful survey and estimated that the factory building had a remaining useful life of 25 years as of January 1, 2025.
2. An additional assessment of 2024 income taxes was levied and paid in 2025.
3. When calculating the accrual for officers' salaries at December 31, 2025, it was discovered that the accrual for officers' salaries for December 31, 2024, had been overstated.
4. On December 15, 2025, Arenes Corporation declared a cash dividend on its common stock outstanding, payable February 1, 2026, to the common stockholders of record December 31, 2025.

Instructions

Describe fully how each of the items above should be reported in the financial statements of Arenes Corporation for the year 2025.

CT4.2 (LO 1) (Identifying Balance Sheet Deficiencies) The assets of Fonzarelli Corporation are presented below (000s omitted).

Fonzarelli Corporation Balance Sheet (partial) December 31, 2025		
Assets		
Current assets		
Cash		$ 100,000
Unclaimed payroll checks		27,500
Debt investments (trading) (fair value $30,000) at cost		37,000
Accounts receivable (less bad debt reserve)		75,000
Inventory—at lower-of-cost (determined by the next-in, first-out method)-or-net realizable value		240,000
Total current assets		479,500
Tangible assets		
Land (less accumulated depreciation)		80,000
Buildings and equipment	$800,000	
Less: Accumulated depreciation	250,000	550,000
Net tangible assets		630,000
Long-term investments		
Stocks and bonds		100,000
Treasury stock		70,000
Total long-term investments		170,000
Other assets		
Discount on bonds payable		19,400
Sinking fund		975,000
Total other assets		994,400
Total assets		$2,273,900

Instructions

Indicate the deficiencies, if any, in the foregoing presentation of Fonzarelli Corporation's assets.

CT4.3 (LO 1) Writing (Critique of Balance Sheet Format and Content) The following is the balance sheet of Sameed Brothers Corporation (000s omitted).

Sameed Brothers Corporation Balance Sheet December 31, 2025		
Assets		
Current assets		
Cash	$26,000	
Marketable securities	18,000	
Accounts receivable	25,000	
Inventory	20,000	
Supplies	4,000	
Stock investment in subsidiary company	20,000	$113,000
Assets		
Investments		
Treasury stock		25,000
Property, plant, and equipment		
Buildings and land	91,000	
Less: Reserve for depreciation	31,000	60,000
Other assets		
Cash surrender value of life insurance		19,000
Total assets		$217,000
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$22,000	
Reserve for income taxes	15,000	
Customers' accounts with credit balances	1	$ 37,001
Deferred credits		
Unamortized premium on bonds payable		2,000

(continues)

Long-term liabilities		
Bonds payable		60,000
Total liabilities		99,001
Common stock		
Common stock, par $5	85,000	
Earned surplus	24,999	
Cash dividends declared	8,000	117,999
Total liabilities and stockholders' equity		$217,000

Instructions

Evaluate the balance sheet presented. State briefly the proper treatment of any item criticized.

CT4.4 (LO 1) Ethics (Presentation of Property, Plant, and Equipment) Carol Keene, corporate comptroller for Dumaine Industries, is trying to decide how to present "Property, plant, and equipment" in the balance sheet. She realizes that the statement of cash flows will show that the company made a significant investment in purchasing new equipment this year, but overall she knows the company's plant assets are rather old. She feels that she can disclose one figure titled "Property, plant, and equipment, net of depreciation," and the result will be a low figure. However, it will not disclose the age of the assets. If she chooses to show the cost less accumulated depreciation, the age of the assets will be apparent. She proposes the following.

Property, plant, and equipment, net of depreciation	$10,000,000
rather than	
Property, plant, and equipment	$50,000,000
Less: Accumulated depreciation	40,000,000
Net book value	$10,000,000

Instructions

Answer the following questions.

a. What are the ethical issues involved?

b. What should Keene do?

CT4.5 (LO 2) Writing (Cash Flow Analysis) The partner in charge of the Kappeler Corporation audit comes by your desk and leaves a letter he has started to the CEO and a copy of the cash flow statement for the year ended December 31, 2025. Because he must leave on an emergency, he asks you to finish the letter by explaining: (1) the disparity between net income and cash flow, (2) the importance of operating cash flow, (3) the renewable source(s) of cash flow, and (4) possible suggestions to improve the cash position.

Kappeler Corporation
Statement of Cash Flows
For the Year Ended December 31, 2025

Cash flows from operating activities		
Net income		$ 100,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 10,000	
Amortization expense	1,000	
Loss on sale of fixed assets	5,000	
Increase in accounts receivable (net)	(40,000)	
Increase in inventory	(35,000)	
Decrease in accounts payable	(41,000)	(100,000)
Net cash provided by operating activities		–0–
Cash flows from investing activities		
Sale of plant assets	25,000	
Purchase of equipment	(100,000)	
Purchase of land	(200,000)	
Net cash used by investing activities		(275,000)
Cash flows from financing activities		
Payment of dividends	(10,000)	
Redemption of bonds	(100,000)	
Net cash used by financing activities		(110,000)
Net decrease in cash		(385,000)
Cash balance, January 1, 2025		400,000
Cash balance, December 31, 2025		$ 15,000

(continues)

Date
President Kappeler, CEO
Kappeler Corporation
125 Wall Street
Middleton, Kansas 67458
Dear Mr. Kappeler:
I have good news and bad news about the financial statements for the year ended December 31, 2025. The good news is that net income of $100,000 is close to what we predicted in the strategic plan last year, indicating strong performance this year. The bad news is that the cash balance is seriously low. Enclosed is the Statement of Cash Flows, which best illustrates how both of these situations occurred simultaneously ...

Instructions

Complete the letter to the CEO, including the four components requested by your boss.

FASB Codification References

[1] FASB ASC 320-10-35-1. [Predecessor literature: "Accounting for Certain Investments in Debt and Equity Securities," *Statement of Financial Accounting Standards No. 115* (Norwalk, Conn.: FASB, 1993).]
[2] FASB ASC 825-10-25-1. [Predecessor literature: "The Fair Value Option for Financial Assets and Liabilities, Including an Amendment of FASB Statement No. 115," *Statement of Financial Accounting Standards No. 159* (Norwalk, Conn.: FASB, February 2007).]
[3] FASB ASC 470-10-05-6. [Predecessor literature: "Classification of Short-term Obligations Expected to Be Refinanced," *Statement of Financial Accounting Standards No. 6* (Stamford, Conn.: FASB, 1975).]
[4] FASB ASC 505-10-50. [Predecessor literature: "Disclosure of Information about Capital Structure," *Statement of Financial Accounting Standards No. 129* (Norwalk: FASB, 1997), par. 4).]
[5] FASB ASC 230-10-05. [Predecessor literature: "Statement of Cash Flows," *Statement of Financial Accounting Standards No. 95* (Stamford, Conn.: FASB, 1987).]
[6] FASB ASC 235-10-05. [Predecessor literature: "Disclosure of Accounting Policies," *Opinions of the Accounting Principles Board No. 22* (New York: AICPA, 1972).]
[7] FASB ASC 275-10-05. [Predecessor literature: "Disclosure of Certain Significant Risks and Uncertainties," *Statement of Position 94-6* (New York: AICPA, 1994).]
[8] FASB ASC 820-10-15. [Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE4.1 Access the Codification glossary ("Master Glossary") to answer the following.

a. What is the definition provided for current assets?

b. What is the definition of an intangible asset? In what section of the Codification are intangible assets addressed?

c. What are cash equivalents?

d. What are financing activities?

CE4.2 What guidance does the Codification provide on the classification of current liabilities?

CE4.3 What guidance does the Codification provide concerning the format of accounting disclosures?

CE4.4 What are the objectives related to the statement of cash flows?

Codification Research Case

In light of the full disclosure principle, investors and creditors need to know the balances for assets, liabilities, and equity as well as the accounting policies adopted by management to measure the items reported in the balance sheet.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the literature that addresses the disclosure of accounting policies.

b. How are accounting policies defined in the literature?

c. What are the three scenarios that would result in detailed disclosure of the accounting methods used?

d. What are some examples of common disclosures that are required under this statement?

Additional Professional Resources

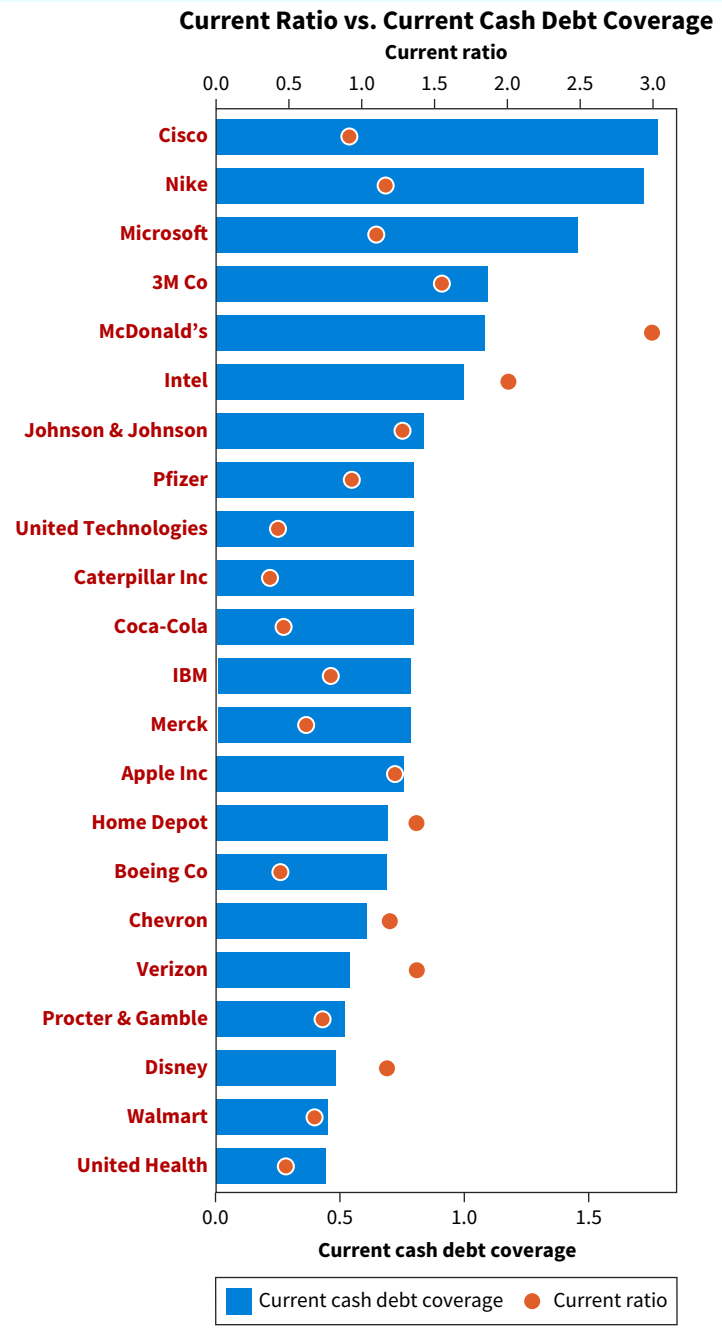
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Understand Relationships Among Data

DA4.1 Is there a correlation between a company's current ratio and its debt coverage ratio? What is a good benchmark for profit margin on sales for a company in the technology industry? Can I use profit margin to project a company's payout ratio?

We can use publicly available financial data to answer these questions and many more. Data visualizations like the following chart can help us organize data in a way that helps us see relationships among the data that we might not understand from looking at numbers on a spreadsheet.



Required

For this exercise, you will use data visualizations showing various financial ratios for a selection of companies in the Dow Jones Industrial Average. You will then use that data to answer questions about the financial results of those companies.

Go to Wiley Course Resources for complete details and instructions.

DA4.2 Understanding the relationships among key financial ratios is critical when making investment or credit decisions.

Required

Using the same visualizations from DA4.1, you will take a deeper look at the relationships among the financial ratios and consider what conclusions can be drawn from that data.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics for Financial Ratio Analysis

DA4.3 Before we can use visualizations to understand relationships among various financial ratios, we must first calculate the ratios. We learned about "data cleansing" in Chapter 2. Now, we can take our cleaned-up data and use it to calculate financial ratios.

Required

For this analytics exercise, you will use Excel to calculate several financial ratios for companies in the Dow 30. After calculating the ratios, you will create graphs in Excel to identify and understand relationships among the data.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 5

Compare the accounting procedures related to the balance sheet under GAAP and IFRS.

As in GAAP, the balance sheet and the statement of cash flows are required statements for IFRS. However, the content and presentation of an IFRS statement of financial position (balance sheet) are different, while those for the cash flow statement are similar to those used for GAAP. In general, the disclosure requirements related to the balance sheet and the statement of cash flows are much more extensive and detailed in the United States. *IAS 1*, "Presentation of Financial Statements," provides the overall IFRS requirements for balance sheet information. *IAS 7*, "Cash Flow Statements," provides the overall IFRS requirements for cash flow information. IFRS insights on the statement of cash flows are presented in Chapter 22.

Following are the key similarities and differences between GAAP and IFRS related to the balance sheet.

Similarities

- Both IFRS and GAAP allow the use of title "balance sheet" or "statement of financial position." IFRS recommends but does not require the use of the title "statement of financial position" rather than balance sheet.
- Both IFRS and GAAP require disclosures about (1) accounting policies followed, (2) judgments that management has made in the process of applying the entity's accounting policies, and (3) the key assumptions and estimation uncertainty that could result in a material adjustment to the carrying amounts of assets and liabilities within the next financial year. Comparative prior period information must be presented and financial statements must be prepared annually.
- IFRS and GAAP require presentation of non-controlling interests in the equity section of the balance sheet.

Differences

- IFRS requires a classified statement of financial position except in very limited situations. IFRS follows the same guidelines as this text for distinguishing between current and non-current assets and liabilities. However, under GAAP, public companies must follow SEC regulations, which require specific line items. In addition, specific GAAP mandates certain forms of reporting for this information.
- Under IFRS, current assets are usually listed in the reverse order of liquidity. For example, under GAAP cash is listed first, but under IFRS it is listed last.
- IFRS has many differences in terminology that you will notice in this text. For example, in the equity section, common stock is called share capital—ordinary.
- Use of the term "reserve" is discouraged in GAAP, but there is no such prohibition in IFRS.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 5

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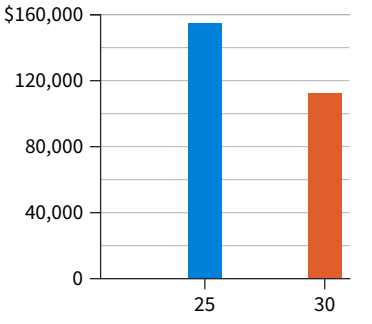
Accounting and the Time Value of Money

WHAT is the time value of money?

Consider this question: If I offer you either $100 today or the promise of $100 tomorrow, which would you choose? While I never go back on a promise and it is very likely that I will pay you, receiving $100 today is probably more valuable. If you have $100 now, you can invest that money, receive interest, and then have more than $100 tomorrow. So, as the **length of time** you wait to receive the money increases, the **amount of money** (interest that accumulates) increases as well.

WHY are time value of money concepts important to accounting?

Value of Retirement Fund at Age 65 (with $1,000 per year contributions with a 6% annual return)



A significant part of accounting is measurement. In fact, the measurement of a variety of assets and liabilities involves cash flows that will be received or paid in the future, including pension obligations, fair value estimates, and valuations of receivables. GAAP requires that we record these assets and liabilities on the balance sheet in today's dollars. This allows investors and creditors to be able to compare today's dollar and tomorrow's dollar on the same footing—to compare "apples to apples."

This also has implications for you. For example, suppose you wish to begin saving for retirement by setting aside $1,000 each year, beginning when you are 25 and assuming a rate of return of 6% on your retirement account. How much will you have on hand when you retire at age 65? Using future value computations that you will learn in this chapter, we can determine that those $1,000 contributions each year will grow to balance of $154,762, as shown in the adjacent chart (the blue bar). However, if you delay starting those contributions until age 30, your retirement fund will grow only to a value of $111,435 (the orange bar in the chart). That is quite a haircut—about 28%. The lesson? Start early with your retirement savings plan because by delaying or missing contributions, you miss out on the power of compounding earned interest.

HOW are time value of money concepts applied in accounting?

Generally, managers, accountants, and investors are attempting to determine a future value (as in the retirement savings example) or the present value (or discounting). Important time value of money factors that must be considered include (1) calculating future and present dollar values, (2) identifying the number of time periods between the future and present values, and (3) specifying the appropriate interest rate. The purpose of this chapter is to present the tools and techniques that will help you measure the time value of money effects of present and future cash inflows and outflows.

Sources: Adapted from T. Rowe Price, "A Roadmap to Financial Security for Young Adults," *Invest with Confidence* (*troweprice.com*); and Chris Seabury, "Young Investors: What Are You Waiting For?" *Investopedia* (January 20, 2020).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 5.1 Describe the fundamental concepts related to the time value of money.	**5.1 Basic Time Value Concepts** • The importance of time value concepts • Understanding interest • How to solve compound interest problems	Examples **5.1** Simple Interest **5.2** Simple vs. Compound Interest **5.3** Future Value Factors Put It into Practice LO 5.1 Compute Simple and Compound Interest
LO 5.2 Solve future and present value of 1 problems.	**5.2 Single-Sum Problems** • Future value of a single sum • Present value of a single sum • Solving for other unknowns in single-sum problems	Examples **5.4** FV of a Single Sum **5.5** FV of a Single Sum **5.6** PV of a Single Sum **5.7** PV of a Single Sum **5.8** Solving for the Number of Periods **5.9** Solving for the Interest Rate Put It into Practice LO 5.2 Compute FV and PV of 1
LO 5.3 Solve future value of ordinary and annuity due problems.	**5.3 Annuities (Future Values)** • Future value of an ordinary annuity • Future value of an annuity due • Solving for unknowns in future value of annuity problems	Examples **5.10** FV of an Ordinary Annuity **5.11** FV of an Ordinary Annuity **5.12** FV of an Annuity Due **5.13** FV of an Annuity Due **5.14** Solving for the Amount of Rents **5.15** Solving for the Number of Rents Put It into Practice LO 5.3 Compute FV of an Ordinary Annuity and Annuity Due
LO 5.4 Solve present value of ordinary and annuity due problems.	**5.4 Annuities (Present Values)** • Present value of an ordinary annuity • Present value of an annuity due • Solving for unknowns in present value of annuity problems	Examples **5.16** PV of an Ordinary Annuity **5.17** PV of Lottery **5.18** PV of Rent Payments **5.19** Solving for the Effective-Interest Rate on a Loan **5.20** Solving for the Ordinary Annuity for a College Fund Put It into Practice LO 5.4 Compute PV of an Ordinary Annuity and Annuity Due
LO 5.5 Solve present value problems related to deferred annuities, bonds, and expected cash flows.	**5.5 Other Time Value of Money Issues** • Deferred annuities • Valuation of long-terms bonds • Present value measurement	Examples **5.21** FV of a Deferred Annuity **5.22** PV of a Deferred Annuity **5.23** Long-Term Bond Valuation **5.24** Expected Cash Flows Put It into Practice LO 5.5 Analyze Time Value Decisions

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

5.1 Basic Time Value Concepts

LEARNING OBJECTIVE 1

Describe the fundamental concepts related to the time value of money.

In accounting (and finance), the phrase **time value of money** indicates that a dollar received today is worth more than a dollar promised at some time in the future. Why? Because of the opportunity to invest today's dollar and receive interest on the investment. Yet, when deciding among investment or borrowing alternatives, it is essential to compare today's dollar and tomorrow's dollar on the same footing—to compare "apples to apples." Investors do that by using the concept of **present value**, which has many applications in accounting.

The Importance of Time Value Concepts

Financial reporting uses different measurements in different situations—historical cost for equipment, net realizable value for inventories, fair value for investments. As we discussed in Chapters 1 and 3, the FASB increasingly is requiring the use of fair values in the measurement of assets and liabilities.

However, for many assets and liabilities, market-based fair value information is not available. In these cases, fair value can be estimated based on the expected future cash flows related to the asset or liability. Such fair value estimates are generally considered Level 3 (most subjective) in the fair value hierarchy. They are based on unobservable inputs, such as a company's own data or assumptions related to the expected future cash flows associated with the asset or liability.

As discussed in the fair value guidance, present value techniques are used to convert expected cash flows into present values, which represent an estimate of fair value. [1] (See the FASB Codification References near the end of the chapter.) Some of the applications of present value-based measurements in accounting topics, which we discuss in this text, include the following.[1]

Present Value-Based Accounting Measurements

1. **Notes.** Valuing noncurrent receivables and payables that carry no stated rate or a stated rate that is different than the market interest rate.
2. **Leases.** Valuing assets and obligations to be capitalized under long-term leases and measuring the amount of the lease payments and annual leasehold amortization.
3. **Pensions and other postretirement benefits.** Measuring service cost components of employers' postretirement benefits expense and postretirement benefits obligation.
4. **Long-term assets.** Evaluating alternative long-term investments by discounting future cash flows, determining the value of assets acquired under deferred payment contracts, and measuring impairment of assets.
5. **Stock-based compensation.** Determining the fair value of employee services in compensatory stock-option plans.
6. **Business combination.** Determining the value of receivables, payables, liabilities, accruals, and commitments acquired or assumed in a "purchase."
7. **Disclosures.** Measuring the value of future cash flows from oil and gas reserves for disclosure in supplementary information.
8. **Environmental liabilities.** Determining the fair value of future obligations for asset retirements.

In addition to accounting and business applications, present value concepts also apply to your own finance and investment decisions. In purchasing a home or car, planning for retirement, and evaluating alternative investments, you will need to understand time value of money concepts.

[1] GAAP addresses present value as a measurements basis for a broad array of transactions, such as accounts and loans receivable [2], leases [3], postretirement benefits [4], asset impairments [5], and stock-based compensation [6].

Understanding Interest

To understand interest, let's consider an example. Chase Bank lends Hillfarm Company $10,000 with the understanding that Hillfarm will repay $10,600. Here is the breakdown of this agreement.

- $10,000 is the **principal**, or the amount borrowed or lent.
- $600 is the **interest**, or the payment for the use of money.
- Chase will have $600 of interest revenue.
- Hillfarm will have $600 of interest expense.

Lenders generally state the amount of interest as a rate over a specific period of time, rather than as a dollar amount. The interest rate in the Chase/Hillfarm example is 6%, which is calculated by dividing the total interest by the principal ($600 ÷ $10,000).

In practice, interest is expressed as a percentage rather than a dollar amount. Business managers make investing and borrowing decisions based on interest rates rather than actual dollar amounts of interest to be received or paid.[2] Interest can be calculated on a simple or compound basis, as you'll discover next.

Simple Interest

Companies compute **simple interest** on the amount of the principal only. It is the return on (or growth of) the principal for one time period. The following equation expresses simple interest.[3]

$$\textbf{Interest} = p \times i \times n$$

where:

p = principal (the amount borrowed or invested)
i = rate of interest for a single period (a percentage of the outstanding principal)
n = number of periods (years, or portions of a year, that the principal is outstanding)

Example 5.1
Calculating Simple Interest

FACTS Hillfarm Company borrows $10,000 for one year with a simple interest rate of 6% per year.

QUESTION What is the total interest to be paid by Hillfarm?

SOLUTION

Hillfarm computes the total interest it will pay as follows.

$$\begin{aligned}\textbf{Interest} &= p \times i \times n \\ &= \$10{,}000 \times .06 \times 1 \\ &= \$600\end{aligned}$$

If Hillfarm borrows $10,000 for 3 months at 6%, the interest is $150, computed as follows.

$$\begin{aligned}\text{Interest} &= \$10{,}000 \times .06 \times 3/12 \\ &= \$150\end{aligned}$$

Because the 6% is an annual interest rate but Hillfarm is only borrowing money for 3 months, we must adjust the 6% into a 3-month interest rate by multiplying by 3/12.

Compound Interest

John Maynard Keynes, the legendary English economist, supposedly called it magic. Mayer Rothschild, the founder of the famous European banking firm, proclaimed it the eighth wonder of the world. Today, people continue to praise its power. The object of their affection? Compound interest.

[2]Federal law requires the disclosure of interest rates on an annual basis in all contracts. That is, instead of stating the rate as "1% per month," contracts must state the rate as "12% per year" if it is simple interest, or "12.68% per year" if it is compounded monthly.

[3]Business mathematics and business finance texts traditionally state simple interest as I (interest) = P (principal) × R (rate) × T (time).

We compute **compound interest** on principal **and** on any interest earned that has not been paid or withdrawn. It is the return on, or growth of, the principal for two or more time periods.

Example 5.2 Simple versus Compound Interest

FACTS Vasquez Company deposits $10,000 in the Last National Bank, where it will earn simple interest of 9% per year. It deposits another $10,000 in the First State Bank, where it will earn compound interest of 9% per year compounded annually. In both cases, Vasquez will not withdraw any interest until 3 years from the date of deposit.

QUESTION What is the difference in interest received and accumulated balances for Vasquez on the two deposits?

SOLUTION

The computations and accumulated balances for both deposits are as follows.

Last National Bank

Simple Interest Calculation	Simple Interest	Accumulated Year-End Balance
Year 1 $10,000.00 × .09	$ 900.00	$10,900.00
Year 2 $10,000.00 × .09	900.00	$11,800.00
Year 3 $10,000.00 × .09	900.00	$12,700.00
	$2,700.00	

$10,000 used to compute interest in all 3 years

$250.29 Difference

First State Bank

Compound Interest Calculation	Compound Interest	Accumulated Year-End Balance
Year 1 $10,000.00 × .09	$ 900.00	$10,900.00
Year 2 $10,900.00 × .09	981.00	$11,881.00
Year 3 $11,881.00 × .09	1,069.29	$12,950.29
	$2,950.29	

Accumulated balance used to compute interest in each succeeding year

As you can see, the deposit at First State Bank earned $250.29 more interest. **Compound interest uses the accumulated balance (principal plus interest to date) at each year-end to compute interest in the succeeding year.** This explains the larger balance in the compound interest account.

In Example 5.2, Vasquez would clearly choose compound interest, if available, over simple interest as it provides $250.29 of additional interest revenue. Not surprisingly, compound interest is the typical interest computation applied in business situations. Simple interest usually applies only to short-term investments and debts that involve a time span of one year or less.

The continuing debate on Social Security reform provides an additional context to illustrate the power of compounding. One proposed idea is for the government to give $1,000 to every citizen at birth.

- Assuming the account earns a modest 5% annual return until retirement at age 65, the $1,000 would grow to **$23,839**.
- If the government waited until age 18 to deposit the money, it would grow to only **$9,906** with annual compounding.

That is, reducing the time invested by about one-third results in more than a 50% reduction in retirement money. This example illustrates the importance of starting early when the power of compounding is involved.

Keep this example in mind as you begin your career and are offered the opportunity to contribute to a retirement plan. The earlier you begin saving, the more savings you will have to enjoy your retirement! We show you next how to solve typical compound interest problems used in business as well as those you may encounter in your own life.

How to Solve Compound Interest Problems

Solving compound interest problems requires understanding the variables and the formulas. The following four variables are fundamental to all compound interest problems.

Fundamental Variables

1. Rate of interest. Unless otherwise stated, an annual rate that must be adjusted to reflect the length of the compounding period if less than a year.

2. Number of time periods. The number of compounding periods. (A period may be equal to or less than a year.)

3. Future value. The value at a future date of a given sum or sums invested assuming compound interest.

4. Present value. The value now (present time) of a future sum or sums discounted assuming compound interest.

Illustration 5.1 depicts the relationship of these four fundamental variables in a **time diagram**.

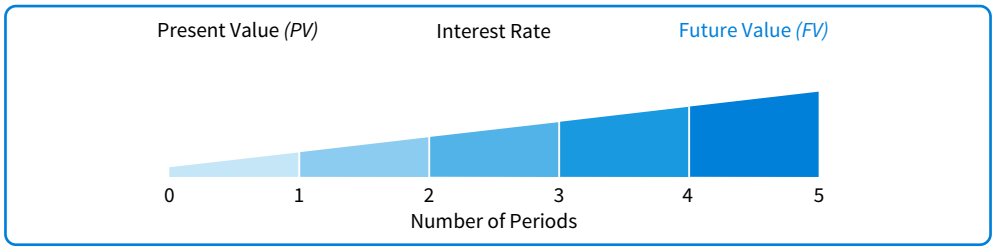


ILLUSTRATION 5.1 Basic Time Diagram

In some cases, all four of these variables are known. However, at least one variable is unknown in many business situations. To better understand and solve the problems in this chapter, we encourage you to sketch compound interest problems in the form of a time diagram, as shown in Illustration 5.1.

Compound Interest Tables

Determining compound interest requires some calculations. To help solve these problems more quickly, we present the following five different types of compound interest tables at the end of this chapter.

Interest Tables and Their Contents

1. Future Value of 1 Table. Contains the amounts to which 1 will accumulate if deposited now at a specified rate and left for a specified number of periods (Table 5.1).

2. Present Value of 1 Table. Contains the amounts that must be deposited now at a specified rate of interest to equal 1 at the end of a specified number of periods (Table 5.2).

3. Future Value of an Ordinary Annuity of 1 Table. Contains the amounts to which periodic rents of 1 will accumulate if the payments (rents) are invested at the **end** of each period at a specified rate of interest for a specified number of periods (Table 5.3).

4. Present Value of an Ordinary Annuity of 1 Table. Contains the amounts that must be deposited now at a specified rate of interest to permit withdrawals of 1 at the **end** of regular periodic intervals for the specified number of periods (Table 5.4).

5. Present Value of an Annuity Due of 1 Table. Contains the amounts that must be deposited now at a specified rate of interest to permit withdrawals of 1 at the beginning of regular periodic intervals for the specified number of periods (Table 5.5).

These tables should help you study this chapter as well as solve other problems involving interest. Note that you can also use financial calculators and Excel spreadsheets to solve compound interest problems. We discuss how in Appendix 5A.

Illustration 5.2 lists the general format and content of these tables. This table shows how much principal plus interest a dollar accumulates to at the end of each of five periods, at three different rates of compound interest.

ILLUSTRATION 5.2 Excerpt from Table 5.1

Future Value of 1 at Compound Interest (Excerpt from Table 5.1)			
Period	**4%**	**5%**	**6%**
1	1.04000	1.05000	1.06000
2	1.08160	1.10250	1.12360
3	1.12486	1.15763	1.19102
4	1.16986	1.21551	1.26248
5	1.21665	1.27628	1.33823

Without the tables, you would have to calculate these amounts yourself. For example, the formula to determine the future value factor (*FVF*) for 1 is as follows.

$$FVF_{n,i} = (1 + i)^n$$

where:

$FVF_{n,i}$ = future value factor for n periods at i interest
n = number of periods
i = rate of interest for a single period

Example 5.3
Future Value Factors

FACTS Assume an interest rate of 5%.

QUESTION What is the future value to which $1 accumulates in one, two, and three periods?

SOLUTION

After three periods of compounding at 5% interest, $1 accumulates to approximately $1.16. The following shows the calculations using the formula for the future value factor (*FVF*) for 1.

Period	Beginning-of-Period Amount	×	Multiplier $(1 + i)$	=	End-of-Period Amount*	Formula $(1 + i)^n$
1	1.00000		1.05		1.05000	$(1.05)^1$
2	1.05000		1.05		1.10250	$(1.05)^2$
3	1.10250		1.05		1.15763	$(1.05)^3$

*These amounts appear in Table 5.1 in the 5% column.

Notice the end-of-period amount matches the first three periods of the 5% column from Illustration 5.2. The compound interest table is derived from the formula.

Determining Compounding Periods

Throughout our discussion of compound interest tables, note the intentional use of the term **periods** instead of **years**. Interest is generally expressed in terms of an annual rate, but not all investing and lending activities are for periods of one or more years. For example, a company may borrow money for 6 months, which is half of a year. Or, a company may invest cash for 3 months, which is one-fourth of a year. In these situations, the annual interest rate and the number of compounding periods must be adjusted.

Illustration 5.3 provides examples of these adjustments with the following calculations.[4]

$$\text{Interest Rate per Compounding Period} = \frac{\text{Annual Interest Rate}}{\text{Number of Compounding Periods}}$$

$$\text{Number of Compounding Periods} = \text{Number of Years} \times \text{Number of Compounding Periods}$$

[4]Because interest is theoretically earned (accruing) every second of every day, it is possible to calculate interest that is **compounded continuously**. Using the natural, or Napierian, system of logarithms facilitates computations involving continuous compounding. As a practical matter, however, most business transactions assume interest to be compounded no more frequently than daily.

ILLUSTRATION 5.3 Frequency of Compounding

12% Annual Interest Rate over 5 Years Compounded	Interest Rate per Compounding Period	Number of Compounding Periods
Annually (1)	.12 ÷ 1 = 12%	5 years × 1 compounding per year = 5 periods
Semiannually (2)	.12 ÷ 2 = 6%	5 years × 2 compoundings per year = 10 periods
Quarterly (4)	.12 ÷ 4 = 3%	5 years × 4 compoundings per year = 20 periods
Monthly (12)	.12 ÷ 12 = 1%	5 years × 12 compoundings per year = 60 periods

In Illustration 5.3, 12% is referred to as the **stated**, **nominal**, or **face rate**. It is the interest rate written into the loan or investment contract. But when interest is compounded more than once a year, the rate of return will be greater than 12%. Why is that? It's because with compounding, you are earning interest on the principal **and** previously earned interest, more than once a year. For example, a 12% annual interest rate compounded quarterly provides a 12.55% return. The 12.55% is called the **effective yield** (or **effective rate of interest**).[5] With compounding, the effective-interest rate will **always** exceed the stated rate.

Illustration 5.4 shows how compounding for five different time periods affects the effective yield and the amount earned by an investment of $10,000 for one year.

ILLUSTRATION 5.4 Comparison of Different Compounding Periods

	Compounding Periods				
Interest Rate	**Annually**	**Semiannually**	**Quarterly**	**Monthly**	**Daily**
8%	8.00%	8.16%	8.24%	8.30%	8.33%
	$ 800	$ 816	$ 824	$ 830	$ 833
9%	9.00%	9.20%	9.31%	9.38%	9.42%
	$ 900	$ 920	$ 931	$ 938	$ 942
10%	10.00%	10.25%	10.38%	10.47%	10.52%
	$1,000	$1,025	$1,038	$1,047	$1,052

Accounting Matters — Don't Put Off Your Taxes!

The Internal Revenue Service (IRS) charges interest on any unpaid taxes from the due date of the tax return until the date the taxes are paid in full. The interest charged is based on the federal short-term rate plus 3%, and interest compounds **daily**. The total amount owed could add up very quickly!

[5] The formula for calculating the **effective rate**, in situations where the compounding frequency (n) is greater than once a year, is as follows.

$$\text{Effective rate} = (1 + i)^n - 1$$

To illustrate, if the stated annual rate is 8% compounded quarterly (or 2% per quarter), the effective annual rate is:

$$\begin{aligned}\text{Effective rate} &= (1 + .02)^4 - 1\\ &= (1.02)^4 - 1\\ &= 1.0824 - 1\\ &= .0824\\ &= 8.24\%\end{aligned}$$

Put It into Practice LO 5.1

Compute Simple and Compound Interest

FACTS Katie Boylen invests $20,000 at 6% annual interest, leaving the money invested without withdrawing any of the interest for 6 years. At the end of the 6 years, Katie withdraws the accumulated amount of money.

INSTRUCTIONS

a. Compute the amount Katie would withdraw assuming the investment earns simple interest.

b. Compute the amount Katie would withdraw assuming the investment earns interest compounded annually.

c. Compute the amount Katie would withdraw assuming the investment earns interest compounded semiannually.

SOLUTION

a. Simple interest:

$1,200 ($20,000 × .06) per year × 6 periods (years)	$ 7,200
Principal	+ 20,000
Total withdrawn	$ 27,200

b. Interest compounded annually:

Future value of 1 @ 6% for 6 periods (years) (Table 5.1)	1.41852
Principal	× $20,000
Total withdrawn	$ 28,370

c. Interest compounded semiannually:

Future value of 1 @ 3% (.06 ÷ 2) for 12 periods (6 years × 2) (Table 5.1)	1.42576
Principal	× $20,000
Total withdrawn	$ 28,515

Even over the relatively short 6-year time span, the impact of compound interest can be seen. Katie will accumulate the most money when interest compounds semiannually.

5.2 Single-Sum Problems

LEARNING OBJECTIVE 2

Solve future and present value of 1 problems.

Many business and investment decisions involve a single amount of money that either exists now or will in the future. Single-sum problems are generally classified into one of the following two categories.

1. Computing the **unknown** **future value** of a known single sum of money that is invested now for a certain number of periods at a certain interest rate.

   To solve: **Accumulate** all cash flows to a future point. In this instance, interest increases the amounts or values over time so that the future value exceeds the present value.

2. Computing the **unknown** **present value** of a known single sum of money in the future that is discounted for a certain number of periods at a certain interest rate.

   To solve: **Discount** all cash flows from the future to the present. In this case, **discounting** reduces the amounts or values, so that the present value is less than the future amount.

Future Value of a Single Sum

To determine the **future value** of a single sum, multiply the future value factor by its present value (principal), as follows.

$$FV = PV\,(FVF_{n,i})$$

where:

FV = future value
PV = present value (principal or single sum)
$FVF_{n,i}$ = future value factor for n periods at i interest

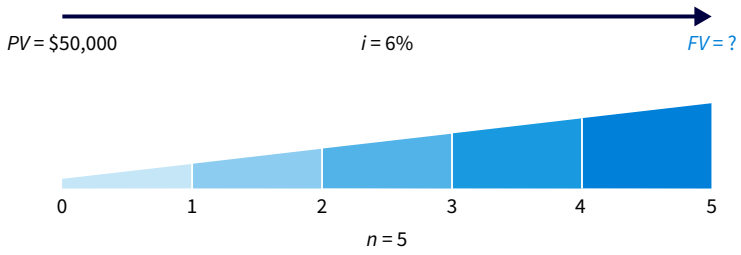
Example 5.4 Future Value of a Single Sum

FACTS Bruegger Co. invests $50,000 for 5 years earning compounded annual interest at a rate of 6%.

QUESTION What is the value of the investment at the end of 5 years?

SOLUTION

We can show this investment situation in time-diagram form as follows.



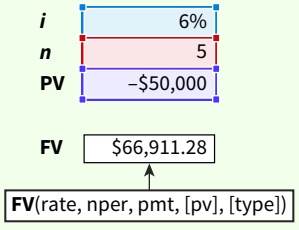
Using the future value formula, we solve Bruegger's investment problem as follows.

$$\begin{aligned}\textbf{Future value} &= \boldsymbol{PV(FVF_{n,i})}\\ &= \$50{,}000\,(FVF_{5,6\%})\\ &= \mathbf{\$50{,}000\,(1 + .06)^5}\\ &= \$50{,}000\,(1.33823)\\ &= \$66{,}912\end{aligned}$$

To more quickly determine the future value factor of 1.33823 in the formula above, we can refer to Table 5.1 (6% column and the 5-period row).

In addition, as indicated, we can use Excel to calculate the present value of the note, as shown here, or a financial calculator may also be used. *See Appendix 5A for specific guidance on using Excel and financial calculators to solve time value of money problems.*

Excel Solution



Example 5.5 presents another real world example for determining future values.

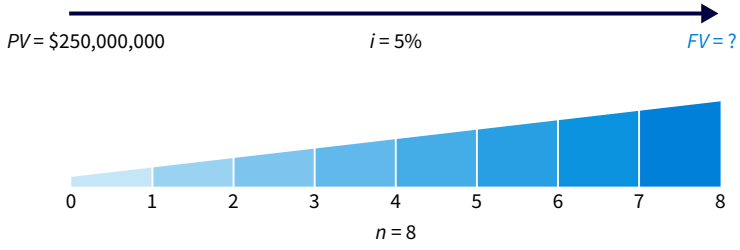
Example 5.5
Future Value of a Single Sum

FACTS Assume that **Amazon** deposited $250 million with **JPMorgan Chase Bank** at the beginning of 2025 as a commitment toward the construction of a second headquarter location (HQ2), to be completed December 31, 2028.

QUESTION How much will Amazon have on deposit at the end of 4 years if interest is 10%, compounded semiannually?

SOLUTION

With a known present value of $250 million, a total of 8 compounding periods (4 × 2), and an interest rate of 5% per compounding period (.10 ÷ 2), you can time-diagram this problem and determine the future value as follows.



$$\begin{aligned}\textbf{Future value} &= \$250{,}000{,}000\ (FVF_{8,5\%}) \\ &= \$250{,}000{,}000\ (1 + .05)^8 \\ &= \$250{,}000{,}000\ (1.47746) \\ &= \$369{,}365{,}000\end{aligned}$$

Using a future value factor found in Table 5.1 (5% column, 8-period row), you find that the deposit of $250 million will accumulate to $369,365,000 by December 31, 2028.

Present Value of a Single Sum

Example 5.4 showed that $50,000 invested at an annually compounded interest rate of 6% will equal $66,912 at the end of 5 years. It follows, then, that $66,912, 5 years in the future, is worth $50,000 now. So, $50,000 is the present value of $66,912. The present value is the amount needed to invest now, to produce a known future value.

- The present value is always a smaller amount than the known future value, due to earned and accumulated interest.
- In determining the future value, a company moves forward in time using a process of **accumulation**. In determining present value, it moves backward in time using a process of **discounting**.

The following formula is used to determine the present value of 1 (present value factor).

$$PVF_{n,i} = \frac{1}{(1+i)^n}$$

where:

$PVF_{n,i}$ = present value factor for n periods at i interest

However, as discussed earlier and to simplify calculations, it would be easier for you to use Table 5.2 (Present Value of 1), so that the present value of any single sum (future value) is as follows.

$$PV = FV\,(PVF_{n,i})$$

where:

PV = present value
FV = future value
$PVF_{n,i}$ = present value factor for n periods at i interest

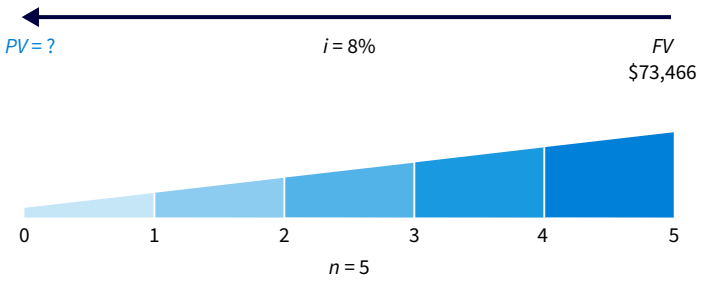
Example 5.6 Present Value of a Single Sum

FACTS You will receive $73,466 in 5 years.

QUESTION What is the value today if the appropriate rate is 8% with annual compounding?

SOLUTION

The following shows this problem as a time diagram.

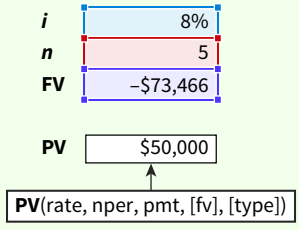


Using the formula, we solve this problem as follows.

$$\begin{aligned}\textbf{Present value} &= FV\,(PVF_{n,i})\\ &= \$73{,}466\,(PVF_{5,8\%})\\ &= \$73{,}466\left(\frac{1}{(1+.08)^5}\right)\\ &= \$73{,}466\,(.68058)\\ &= \$50{,}000 \text{ (rounded by \$.51)}\end{aligned}$$

To determine the present value factor of 0.68058, we refer to the present value of a single sum in Table 5.2 (8% column, 5-period row).

Excel Solution



Example 5.7 presents another personal present value example.

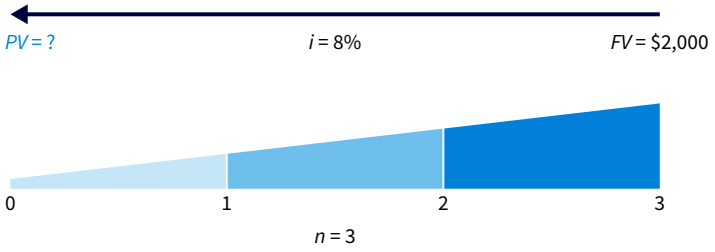
Example 5.7 Present Value of a Single Sum

FACTS Your uncle is giving you $2,000 for a trip to Europe when you graduate from college 3 years from now. He proposes to finance the trip by investing a sum of money now that will provide you with $2,000 upon your graduation. The only conditions are that you graduate and that you tell him how much to invest now.

QUESTION How much should your uncle invest today, earning 8% compound annual interest that will provide you with $2,000 upon your graduation?

SOLUTION

To impress your uncle, you set up the following time diagram and solve this problem as follows.



$$\text{Present value} = \$2{,}000\,(PVF_{3,8\%})$$
$$= \$2{,}000\left(\frac{1}{(1+.08)^3}\right)$$
$$= \$2{,}000\,(.79383)$$
$$= \$1{,}587.66$$

Advise your uncle to invest $1,587.66 now to provide you with $2,000 upon graduation. To satisfy your uncle's other condition, you must pass this course (and many more).

Solving for Other Unknowns in Single-Sum Problems

In many business situations, both the future value and the present value are known, but the number of periods or the interest rate is unknown. However, if you know any three of the four values (future value, *FV;* present value, *PV;* number of periods, *n;* and interest rate, *i*), you can figure out the remaining unknown variable.

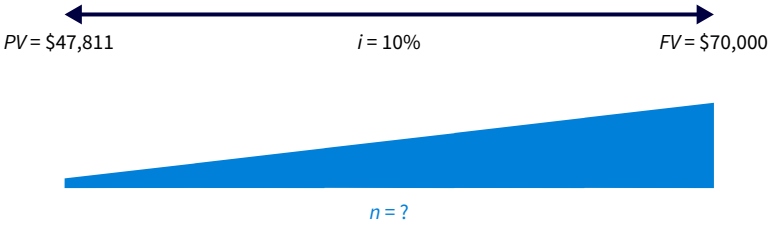
Example 5.8
Solving for the Number of Periods

FACTS The Village of Somonauk wants to accumulate $70,000 for the construction of a veterans' monument in the town square. At the beginning of the current year, the Village deposited $47,811 in a memorial fund that earns 10% interest compounded annually.

QUESTION How many years will it take to accumulate $70,000 in the memorial fund?

SOLUTION

Here, we know both the present value ($47,811) and the future value ($70,000), along with the interest rate of 10%, as shown in the following time diagram.



If we know the present value and the future value, we can solve for the unknown number of periods. We may use either the future value or the present value formulas, as follows.

Future Value Approach	Present Value Approach
$FV = PV\,(FVF_{n,10\%})$	$PV = FV\,(PVF_{n,10\%})$
$\$70{,}000 = \$47{,}811\,(FVF_{n,10\%})$	$\$47{,}811 = \$70{,}000\,(PVF_{n,10\%})$
$FVF_{n,10\%} = \frac{\$70{,}000}{\$47{,}811} = 1.46410$	$PVF_{n,10\%} = \frac{\$47{,}811}{\$70{,}000} = .68301$
Using Table 5.1 (10% column), $n = 4$ years	Using Table 5.2 (10% column), $n = 4$ years

Excel Solution

i	10%
PV	–$47,811
FV	$70,000
n	4

NPER(rate, pmt, pv, [fv], [type])

Example 5.9 presents a situation in which we solve for the interest rate.

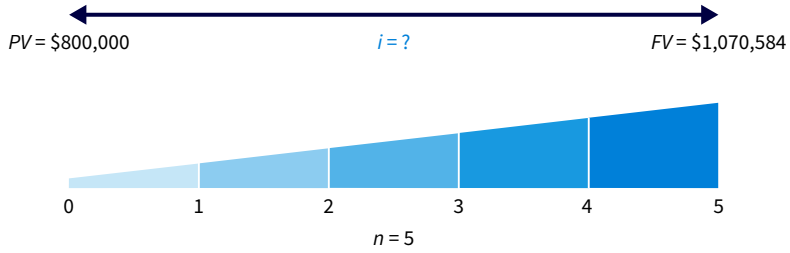
Example 5.9
Solving for the Interest Rate

FACTS Assume that **Amazon** needs $1,070,584 5 years from now to purchase electric scooters for employees in their new HQ2 location. The company currently has $800,000 to invest for that purpose.

QUESTION At what rate of interest must Amazon invest the $800,000 to fund the contract to purchase the electric scooters for $1,070,584 5 years from now?

SOLUTION

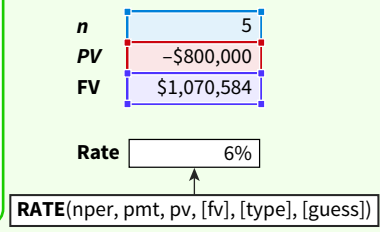
The following time diagram shows this investment situation.



Amazon may determine the unknown interest rate from either the future value approach or the present value approach, as follows.

Future Value Approach	Present Value Approach
$FV = PV\,(FVF_{5,i})$	$PV = FV\,(PVF_{5,i})$
$\$1{,}070{,}584 = \$800{,}000\,(FVF_{5,i})$	$\$800{,}000 = \$1{,}070{,}584\,(PVF_{5,i})$
$FVF_{5,i} = \dfrac{\$1{,}070{,}584}{\$800{,}000} = 1.33823$	$PVF_{5,i} = \dfrac{\$800{,}000}{\$1{,}070{,}584} = .74726$
Using Table 5.1 (5-period row), $i = 6\%$	Using Table 5.2 (5-period row), $i = 6\%$

Excel Solution



Put It into Practice LO 5.2
Compute Future and Present Values of 1

FACTS Vince Stores is considering the following time value of money scenarios.

INSTRUCTIONS

Using the appropriate interest table, answer the question in each scenario. (Each case is independent of the others.)

a. What is the future value of $7,000 at the end of 5 years at 8% interest compounded annually?

b. What is the present value of $7,000 due 8 periods from now, discounted at 6%?

c. Vince needs to accumulate $1,000,000 for future expansion plans. The company's money market fund has a balance of $92,296 and has a guaranteed interest rate of 10%. How many years (with annual compounding) must Vince leave that balance in the fund to get his desired $1,000,000?

d. Assume that Vince desires to accumulate $1 million in 15 years using the money market fund balance of $182,696. At what interest rate must Vince's investment compound annually?

SOLUTION

a. $\$7{,}000(\text{FVF}_{5,8\%}) = \$7{,}000 \times 1.46933 = \$10{,}285$

b. $\$7{,}000(\text{PVF}_{8,6\%}) = \$7{,}000 \times .62741 = \$4{,}392$

c. This can be solved with either the future value approach or the present value approach as follows. The number of interest periods is calculated by first dividing the future value of $1,000,000 by $92,296, which is 10.83471—the value $1.00 would accumulate to—at 10% for the unknown number of interest periods. The factor 10.83471 or its approximate is then located in the Future Value of 1 Table by reading down the 10% column to the 25-period line; thus, 25 is the unknown number of years the company must wait to accumulate $1 million.

d. This can be solved with either the future value approach or the present value approach as follows. The unknown interest rate is calculated by first dividing the future value of $1,000,000 by the present investment of $182,696, which is 5.47357—the amount $1.00 would accumulate to—in 15 years at an unknown interest rate. The factor or its approximate is then located in the Future Value of 1 Table by reading across the 15-period line to the 12% column; thus, 12% is the interest rate Vince must earn on the investment to accumulate $1 million.

5.3 Annuities (Future Value)

LEARNING OBJECTIVE 3

Solve future value of ordinary and annuity due problems.

The preceding discussion involved only the accumulation or discounting of a single principal sum. However, many situations arise in which a series of dollar amounts are paid or received periodically, such as a life insurance contract that involves a series of equal payments made at equal intervals of time. Such a process of periodic payment represents the accumulation of a sum of money through an annuity. An **annuity**, by definition, requires the following.

1. Periodic payments or receipts (called **rents**) of the same amount.
2. The same-length interval between such rents.
3. Compounding of **interest** once each interval.

In this section, we cover the process for calculating the **future value of an annuity,** which is the sum of all the rents plus the accumulated compound interest on the rents.

Note that the rents of an annuity may occur at either the beginning or the end of the periods. If the rents occur at the end of each period, an annuity is classified as an **ordinary annuity**. If the rents occur at the beginning of each period, an annuity is classified as an **annuity due**. The difference between the types of annuities can be significant, as you will see later in Illustration 5.7.

Future Value of an Ordinary Annuity

One approach to determining the future value of an annuity computes the value to which **each** of the rents in the series will accumulate, and then totals their individual future values.

For example, assume that you deposit $1 at the **end** of each of 5 years (an ordinary annuity) in a savings account that earns 5% interest compounded annually. **Illustration 5.5** shows the computation of the future value, using Table 5.1 for each of the five $1 rents.

ILLUSTRATION 5.5 Solving for the Future Value of an Ordinary Annuity

End of Period in Which $1.00 Is to Be Invested						
Present	1	2	3	4	5	Value at End of Year 5
	$1.00					$1.21551
		$1.00				1.15762
			$1.00			1.10250
				$1.00		1.05000
					$1.00	1.00000
Total (future value of an ordinary annuity of $1.00 for 5 periods at 5%)						$5.52563

Because an ordinary annuity consists of rents deposited at the end of the period, those rents earn no interest during the period in which they are deposited. For example, consider the third rent:

- It earns interest for only two periods (periods four and five).
- It earns no interest for the third period since it is not deposited until the end of the third period.

When computing the future value of an ordinary annuity, the number of compounding periods will always be **one less than the number of rents**.

This procedure for computing the future value of an ordinary annuity always produces the correct answer, but it's easier to use the following formula to sum the individual rents plus the compound interest.

$$FVF\text{-}OA_{n,i} = \frac{(1+i)^n - 1}{i}$$

where:

$FVF\text{-}OA_{n,i}$ = future value factor of an ordinary annuity
i = rate of interest per period
n = number of compounding periods

For example, $FVF\text{-}OA_{5,5\%}$ refers to the value to which an ordinary annuity of 1 will accumulate in 5 periods at 5% interest. You can use Table 5.3 to find this value, as shown in **Illustration 5.6**.

ILLUSTRATION 5.6 Excerpt from Table 5.3

Future Value of an Ordinary Annuity of 1 (Excerpt from Table 5.3)			
Period	**4%**	**5%**	**6%**
1	1.00000	1.00000	1.00000
2	2.04000	2.05000	2.06000
3	3.12160	3.15250	3.18360
4	4.24646	4.31013	4.37462
5	5.41632	5.52563*	5.63709

*Note that this annuity table factor is the same as the sum of the future values of 1 factors shown in Illustration 5.5.

The following formula computes the future value of an ordinary annuity.

$$\text{Future value of an ordinary annuity} = R(FVF\text{-}OA_{n,i})$$

where:

R = periodic rent
$FVF\text{-}OA_{n,i}$ = future value of an ordinary annuity factor for n periods at i interest

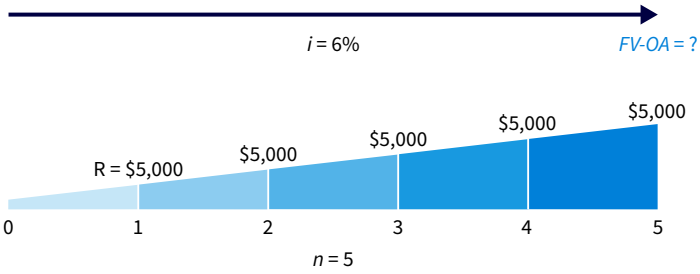
Example 5.10
Future Value of an Ordinary Annuity

FACTS You plan to make five $5,000 deposits made at the end of each of the next 5 years, earning interest of 6%.

QUESTION What is the future value of these five deposits?

SOLUTION

We can time-diagram this problem as follows.



Use of the formula solves this investment problem as follows.

$$\text{Future value of an ordinary annuity} = R\,(FVF\text{-}OA_{n,i})$$
$$= 5{,}000\,(FVF\text{-}OA_{5,6\%})$$
$$= \$5{,}000\left(\frac{(1+.06)^5-1}{0.6}\right)$$
$$= \$5{,}000\,(5.63709)$$
$$= \$28{,}185.45$$

To determine the future value of an ordinary annuity factor of 5.63709 in the above formula, we refer to Table 5.3 (6% column and the 5-period row).

Excel Solution

i	6%
n	5
PMT	–$5,000
PV	$0
FV	$28,185.46

FV(rate, nper, pmt, [pv], [type])

Here is another ordinary annuity problem, set in a business situation.

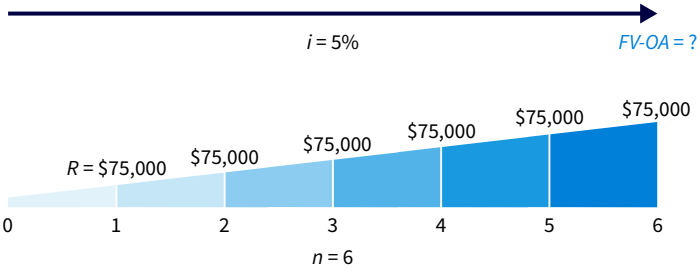
Example 5.11
Future Value of an Ordinary Annuity

FACTS Hightown Electronics deposits $75,000 at the end of each 6-month period for the next 3 years, to accumulate enough money to meet debts that mature in 3 years.

QUESTION What is the future value that Hightown will have on deposit at the end of 3 years if the annual interest rate is 10%?

SOLUTION

You can time-diagram this problem as follows. Note that the deposits are made every 6 months; therefore, the interest is being compounded semiannually and the number of periods will be doubled.



The formula solution for the Hightown Electronics situation is as follows.

$$\begin{aligned}\textbf{Future value of an ordinary annuity} &= R\,(FVF\text{-}OA_{n,i}) \\ &= \$75{,}000\,(FVF\text{-}OA_{6,5\%}) \\ &= \$75{,}000\left(\frac{(1+.05)^6-1}{.05}\right) \\ &= \$75{,}000\,(6.80191) \\ &= \$510{,}143.25\end{aligned}$$

Thus, six 6-month deposits of $75,000 earning 5% per period will grow to $510,143.25.

To determine the future value of an ordinary annuity factor of 6.80191 in the above formula, we refer to Table 5.3 (5% column and the 6-period row).

Future Value of an Annuity Due

Now let's consider an **annuity due**, in which the rents occur at the **beginning** of each period. An annuity due will accumulate interest during the first period, which is in contrast to the ordinary annuity that did not accumulate interest during the first period. Illustration 5.7 shows this distinction.

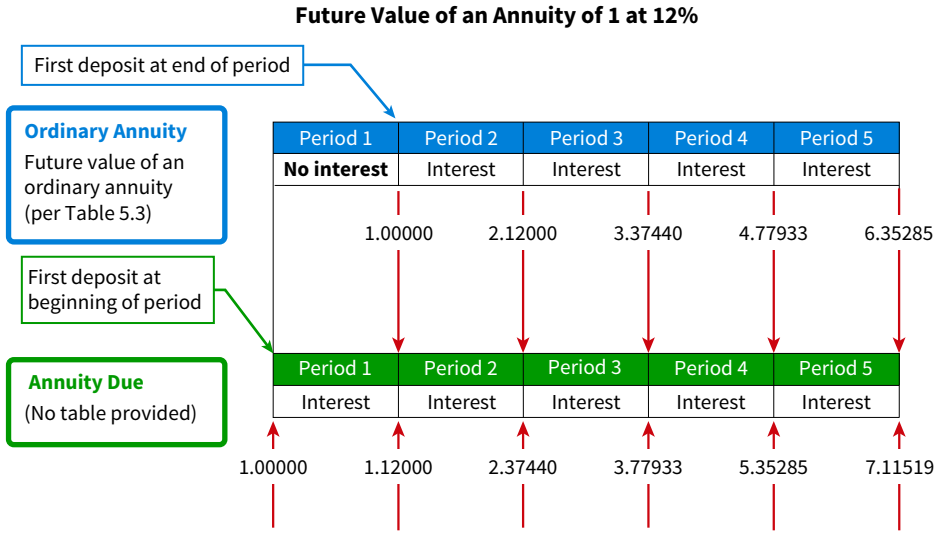


ILLUSTRATION 5.7 Comparison of the Future Value of an Ordinary Annuity with an Annuity Due

In this example, the cash flows from the annuity due come exactly one period earlier than for an ordinary annuity. We can draw the following conclusions from the example.

- If rents occur at the beginning of the period (annuity due), there will be one additional interest period than if rents occur at the end of the period (ordinary annuity).
- The future value of the annuity due factor is exactly 12% higher than the ordinary annuity factor. For example, the value of an annuity due factor at the end of period one at 12% is 1.12000, whereas for an ordinary annuity it is 1.00000.

Therefore, to find the future value of an annuity due factor, multiply the future value of an ordinary annuity factor by 1 plus the interest rate. For example, to determine the future value of an annuity due interest factor for five periods at 12% compound interest, simply multiply the future value of an ordinary annuity interest factor for five periods (6.35285), by one plus the interest rate (1 + .12), to arrive at 7.11519 (6.35285 × 1.12).

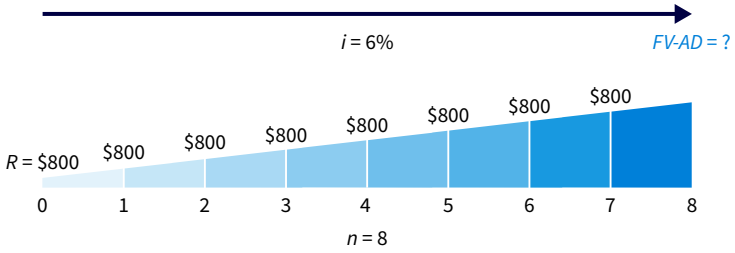
Example 5.12
Future Value of an Annuity Due

FACTS Sue Lotadough plans to deposit $800 a year on each birthday of her son Howard. She makes the first deposit on his tenth birthday, at 6% interest compounded annually.

QUESTION What amount will Sue have accumulated for college expenses by her son's eighteenth birthday?

SOLUTION

If the first deposit occurs on Howard's tenth birthday, Sue will make a total of eight deposits over the life of the annuity (assume no deposit on the eighteenth birthday), as shown in the following time diagram. Because all the deposits are made at the beginning of the periods, they represent an annuity due.



FV-AD = Future value of an annuity due

Referring to Table 5.3 for 8 periods at 6%, Sue finds a factor of 9.89747. She then multiplies this factor by (1 + .06) to arrive at the future value of an annuity due factor. As a result, the accumulated value on Howard's eighteenth birthday is $8,393.06, calculated as follows.

1.	Future value of an ordinary annuity of 1 for 8 periods at 6% (Table 5.3)	9.89747
2.	Factor (1 + .06)	× 1.06
3.	Future value of an annuity due of 1 for 8 periods at 6%	10.49132
4.	Periodic deposit (rent)	× $800
5.	Accumulated value on son's 18th birthday	$8,393.06

Depending on the college he chooses, Howard may have enough to finance only part of his first year of school.

Let's look at one more example of an annuity due problem.

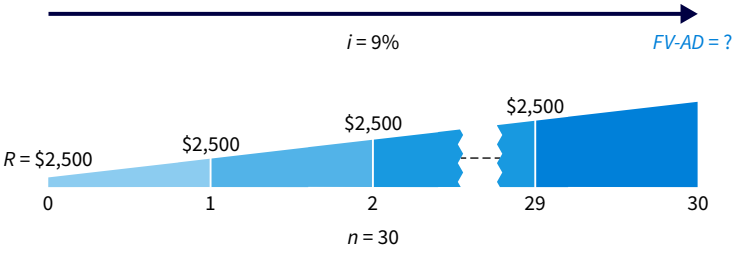
Example 5.13
Future Value of an Annuity Due

FACTS To create his retirement fund, Walter Goodwrench, a mechanic, now works weekends. Mr. Goodwrench deposits $2,500 today in a savings account that earns 9% interest. He plans to deposit $2,500 every year for a total of 30 years.

QUESTION How much cash will Mr. Goodwrench accumulate in his retirement savings account, when he retires in 30 years?

SOLUTION

You can time-diagram this problem as follows.



Using Table 5.3, you compute the solution as follows.

1.	Future value of an ordinary annuity of 1 for 30 periods at 9%	136.30754
2.	Factor (1 + .09)	× 1.09
3.	Future value of an annuity due of 1 for 30 periods at 9%	148.57522
4.	Periodic rent	× $2,500
5.	Accumulated value at end of 30 years	$ 371,438

Mr. Goodwrench should consider putting more then $2,500 per year into his retirement account, depending on how he plans to spend his time during retirement. Do you think a retirement account of $371,438 is enough?

Solving for Unknowns in Future Value of Annuity Problems

Similar to future value and present value problems, if we know three values for a future value of an annuity problem, we can determine the fourth. Here we present two examples: the computations of (1) the amount of rents and (Example 5.14) and (2) number of rents (Example 5.15).

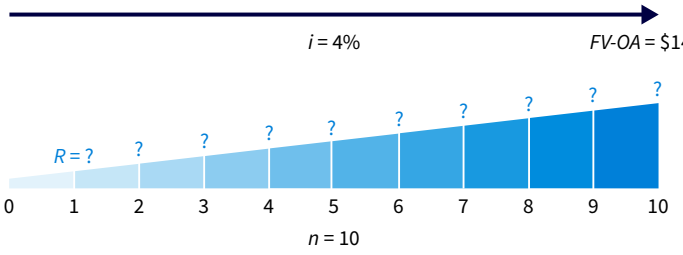
Example 5.14 Solving for the Amount of Rents

FACTS You plan to accumulate $14,000 for a down payment on a condominium 5 years from now. For the next 5 years, you earn an annual return of 8% compounded semiannually.

QUESTION How much should you deposit at the end of each 6-month period?

SOLUTION

Start by determining if it is an ordinary annuity or annuity due. Since the rents will be deposited at the end of each period, it is an ordinary annuity. The $14,000 is the future value of 10 (5 × 2) semiannual end-of-period payments of an unknown amount, at an interest rate of 4% (.08 ÷ 2). The following shows this problem as a time diagram.



FV-OA = Future value of an ordinary annuity

Using the formula for the future value of an ordinary annuity and Table 5.3, you determine the amount of each rent as follows.

$$\textbf{Future value of an ordinary annuity} = R\,(FVF\text{-}OA_{n,i})$$
$$\$14{,}000 = R\,(FVF\text{-}OA_{10,4\%})$$
$$\$14{,}000 = R\,(12.00611)$$
$$R = \$1{,}166.07$$

You must make 10 semiannual deposits of $1,166.07 each to accumulate $14,000 for your down payment.

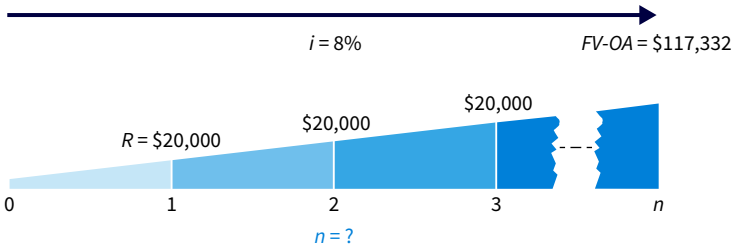
Example 5.15
Solving for the Number of Rents

FACTS A company has a goal to accumulate $117,332 by making periodic deposits of $20,000 at the end of each year, which will earn 8% compounded annually while accumulating.

QUESTION How many deposits must the company make to achieve this goal?

SOLUTION

This situation is an ordinary annuity since the rents are deposited at the end of the period. The $117,332 represents the future value of n(?) $20,000 deposits, at an 8% annual rate of interest. The following shows this problem as a time diagram.



Using the future value of an ordinary annuity formula, the company obtains the following factor.

$$\textbf{Future value of an ordinary annuity} = R\,(FVF\text{-}OA_{n,i})$$

$$\$117{,}332 = \$20{,}000\,(FVF\text{-}OA_{n,8\%})$$

$$FVF\text{-}OA_{n,8\%} = \frac{\$117{,}332}{\$20{,}000} = 5.86660$$

Use Table 5.3 and read down the 8% column to find 5.86660 in the 5-period row. The company must make five deposits of $20,000 each.

Put It into Practice LO 5.3
Compute the Future Value of an Ordinary Annuity and Annuity Due

FACTS Consider the following independent situations involving annuities.

a. What is the future value of 20 periodic payments of $5,000, each made at the end of each period and compounded at 8%?

b. What is the future value of 15 deposits of $2,000, each made at the beginning of each period and compounded at 10%? (Future value as of the end of the fifteenth period.)

c. Steve Malpezzi needs $250,000 in 10 years. How much must he invest at the end of each year, at 5% interest, to meet his needs?

d. Joe Morgan is investing $9,069 at the end of each year in a fund that earns 5% interest. In how many years will the fund be at $100,000?

INSTRUCTIONS

Using the appropriate interest table, answer the questions for each situation.

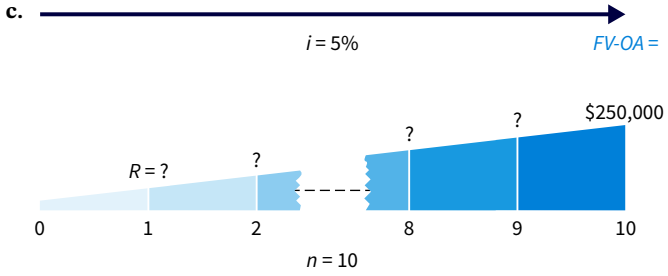
SOLUTION

a. Future value of an ordinary annuity of $5,000 a period for 20 periods at 8%: $5,000 × 45.76196 = $228,810

b. This situation is an annuity due, so remember there is one additional interest accumulation period.

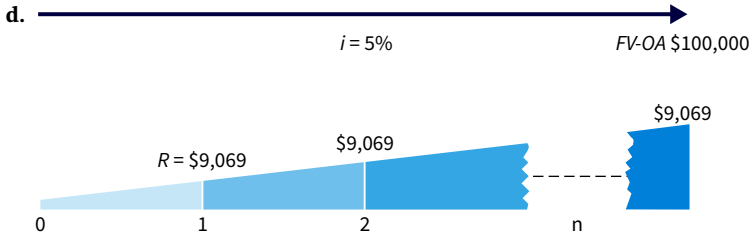
$63,544.96 ($2,000 × 31.77248)
× 1.10 (interest earned in the last period)
$69,899.00

c.



$$\$250{,}000 = R(FVF\text{-}OA_{10,5\%})$$
$$\$250{,}000 = R(12.57789)$$
$$\frac{\$250{,}000}{12.57789} = R$$
$$\$19{,}876 = R$$

d.



$$\$100{,}000 = \$9{,}069\ (FVF\text{-}OA_{n,5\%})$$
$$FVF\text{-}OA_{n,5\%} = \frac{\$100{,}000}{\$9{,}069} = 11.0266$$

Therefore, $n = 9$ years (approximately)

5.4 Annuities (Present Value)

LEARNING OBJECTIVE 4

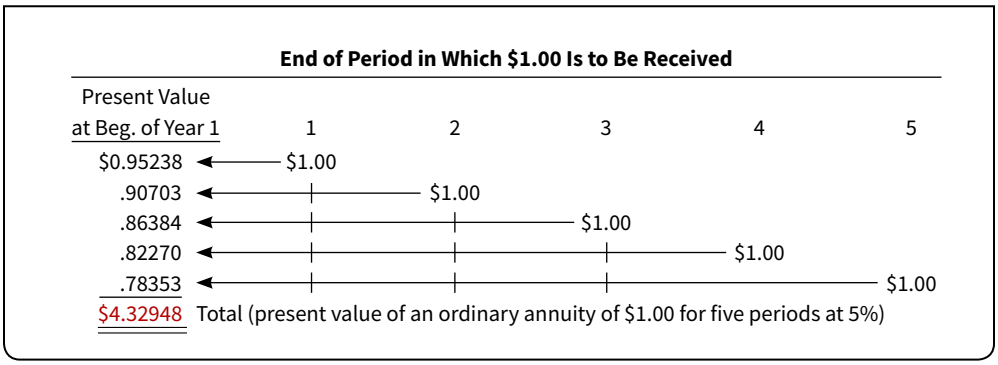
Solve present value of ordinary and annuity due problems.

The present value of an annuity is **the single sum** that, if invested at compound interest now, would provide for an annuity (a series of withdrawals) for a certain number of future periods.

Present Value of an Ordinary Annuity

The present value of an ordinary annuity is the present value of a series of equal rents, to be withdrawn at equal intervals at the end of the period. One approach to finding the present value of an annuity determines the present value of each of the rents in the series and then totals their individual present values. **Illustration 5.8** shows this approach. We may view an annuity of $1, to be received at the **end** of each of 5 periods, as separate amounts. We then compute each present value using Table 5.2, assuming an interest rate of 5%.

ILLUSTRATION 5.8 Solving for the Present Value of an Ordinary Annuity



This computation tells us that if we invest the single sum of $4.33 today at 5% interest for five periods, we will be able to withdraw $1 at the end of each period for five periods. We can summarize this cumbersome procedure by the following formula.

$$PVF\text{-}OA_{n,i} = \frac{1-\frac{1}{(1+i)^n}}{i}$$

The expression $PVF\text{-}OA_{n,i}$ refers to the present value of an ordinary annuity of 1 factor for n periods at i interest. **Illustration 5.9** shows an excerpt from Table 5.4, which bases present values on this formula.

ILLUSTRATION 5.9 Excerpt from Table 5.4

Present Value of an Ordinary Annuity of 1 (Excerpt from Table 5.4)

Period	4%	5%	6%
1	.96154	.95238	.94340
2	1.88609	1.85941	1.83339
3	2.77509	2.72325	2.67301
4	3.62990	3.54595	3.46511
5	4.45182	4.32948*	4.21236

*Note that this annuity table factor is equal to the sum of the present value of 1 factors shown in Illustration 5.8.

The general formula for the present value of any ordinary annuity is as follows.

$$\text{Present value of an ordinary annuity} = R\,(PVF\text{-}OA_{n,i})$$

where:

R = periodic rent (ordinary annuity)
$PVF\text{-}OA_{n,i}$ = present value of an ordinary annuity of 1 for n periods at i interest

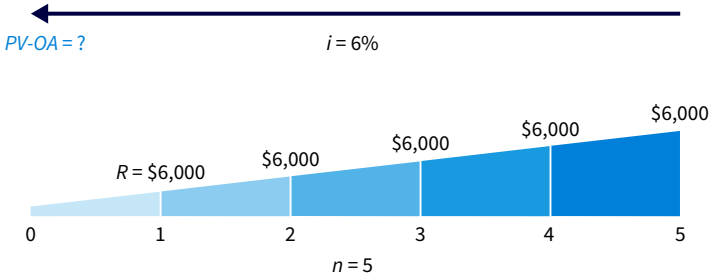
Example 5.16 Present Value of an Ordinary Annuity

FACTS You wish to determine the value today of receiving rental receipts of $6,000 each at the end of each of the next 5 years when discounted at 6%?

QUESTION What is the present value of these future receipts?

SOLUTION

This problem may be time-diagrammed and solved as follows.

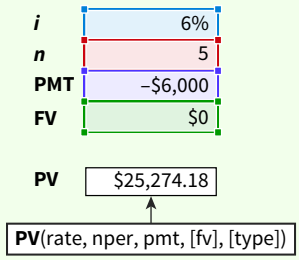


The formula for this calculation is as follows.

$$\begin{aligned}\textbf{Present value of an ordinary annuity} &= R\,(PVF\text{-}OA_{n,i}) \\ &= \$6{,}000\ (PVF\text{-}OA_{5,6\%}) \\ &= \$6{,}000\ (4.21236) \\ &= \$25{,}274.16\end{aligned}$$

The present value of the five ordinary annuity rental receipts of $6,000 each is $25,274.16. To determine the present value of the ordinary annuity factor 4.21236, we refer to Table 5.4 (6% column and 5-period row).

Excel Solution



Here is another real-life annuity situation.

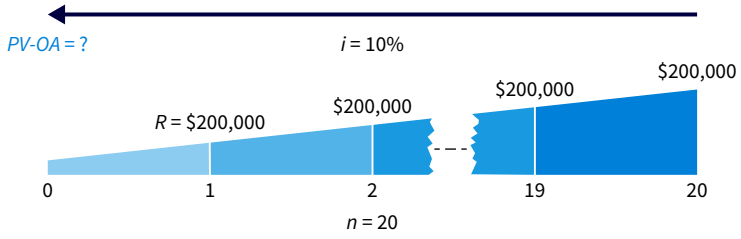
Example 5.17 Present Value of an Ordinary Annuity—Lottery

FACTS Lucky Louie has just won a state lottery prize totaling $4,000,000. He learns that he will receive a check in the amount of $200,000 at the end of each of the next 20 years.

QUESTION What amount has Louie really won? That is, what is the present value of the $200,000 checks he will receive over the next 20 years? Assume an interest rate of 10%.

SOLUTION

You can time-diagram this enviable situation.



You calculate the present value as follows.

$$\begin{aligned}\textbf{Present value of an ordinary annuity} &= R\,(PVF\text{-}OA_{n,i}) \\ &= \$200{,}000\ (PVF\text{-}OA_{20,10\%}) \\ &= \$200{,}000\ (8.51356) \\ &= \$1{,}702{,}712\end{aligned}$$

As a result, if the state deposits $1,702,712 now and that amount earns 10% interest, the state can withdraw $200,000 a year for 20 years to pay Louie the $4,000,000.

Accounting Matters — Up in Smoke

Time value of money concepts also can be relevant to public policy debates. For example, several states had to determine how to receive the payments from tobacco companies as settlement for a national lawsuit against the companies for the healthcare costs of smoking.

The **State of Wisconsin** was due to collect 25 years of payments totaling $5.6 billion. The state could wait to collect the payments, or it could sell the payments to an investment bank (a process called **securitization**). If it were to sell the payments, it would receive a lump-sum payment today of $1.26 billion. Is this a good deal for the state? Assuming a discount rate of 8% and that the payments will be received in equal amounts (e.g., an annuity), the present value of the tobacco payment is:

$5.6 billion ÷ 25 = $224 million payment
$224 million × 10.67478* = $2.39 billion
*PV-OA ($i = 8\%$, $n = 25$)

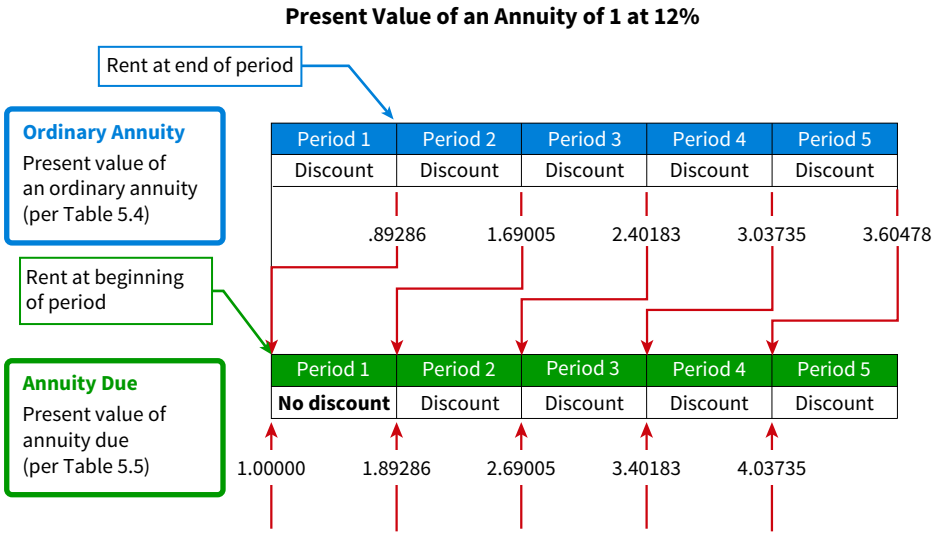
Why would some in the state be willing to take just $1.26 billion today for an annuity whose present value is almost twice that amount? One reason is that Wisconsin was facing a hole in its budget that could be plugged in part by the lump-sum payment. Also, some believed that the risk of not getting paid by the tobacco companies in the future makes it prudent to get the money earlier.

If this latter reason has merit, then the present value computation above should have been based on a higher interest rate. Assuming a discount rate of 15%, the present value of the annuity is $1.448 billion ($5.6 billion ÷ 25 = $224 million; $224 million × 6.46415), which is much closer to the lump-sum payment offered to the State of Wisconsin.

Present Value of an Annuity Due

In our discussion of the present value of an ordinary annuity, we discounted the final rent based on the number of rent periods. In determining the present value of an **annuity due**, there is always one discount period less. Illustration 5.10 shows this distinction.

ILLUSTRATION 5.10 Comparison of Present Value of an Ordinary Annuity with an Annuity Due



In this example, each cash flow from the annuity due comes exactly one period sooner than for an ordinary annuity. We can draw the following conclusions from the example.

- The present value of the cash flows from the annuity due is exactly 12% higher than the present value of an ordinary annuity.
- To find the present value of an annuity due factor, multiply the present value of an ordinary annuity factor by 1 plus the interest rate (that is, $1 + i$).

To determine the present value of an annuity due interest factor for 5 periods at 12% interest, take the present value of an ordinary annuity for five periods at 12% interest (3.60478 from Table 5.4) and multiply it by 1.12 to arrive at the present value of an annuity due, 4.03735 (3.60478 × 1.12).

- A faster to way to determine the present value of an annuity due is to use Table 5.5, which contains the present value of annuity due factors.
- When using Table 5.5, no adjustment needs to be made by multiplying by 1 + the interest rate.

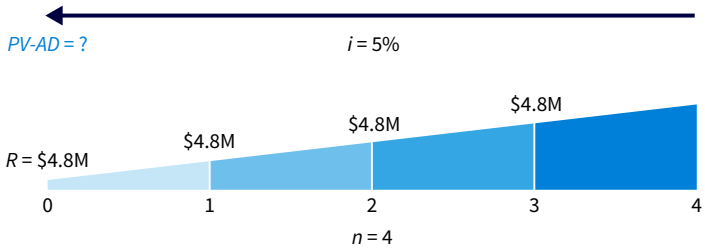
Example 5.18
Present Value of an Annuity Due—Rent Payments

FACTS Space Odyssey, Inc., leases a communications satellite for 4 years with annual rental payments of $4.8 million to be made at the beginning of each year.

QUESTION If the relevant annual interest rate is 5%, what is the present value of the rental obligations?

SOLUTION

We can time-diagram this problem as follows.



PV-AD = the present value of an annuity due

We then make the following computations to solve this problem.

1.	Present value of an ordinary annuity of 1 for 4 periods at 5% (Table 5.4)	3.54595
2.	Factor (1 + .05)	× 1.05
3.	Present value of an annuity due of 1 for 4 periods at 5%	3.72325
4.	Periodic deposit (rent)	× $4,800,000
5.	Present value of payments	$ 17,871,600

Alternatively, if Space Odyssey has a table with the present value of an annuity due, like Table 5.5, we can then simply locate the desired factor 3.72325 (4 periods, 5%) and compute the present value of the lease payments of $17,871,600 ($4,800,000 × 3.72325).

Solving for Unknowns in Present Value of Annuity Problems

In the following examples, we demonstrate how knowing three variables can help us determine how to compute a fourth value, in this case the computation of (1) the interest rate (Example 5.19) and (2) the amount of each rent (Example 5.20).

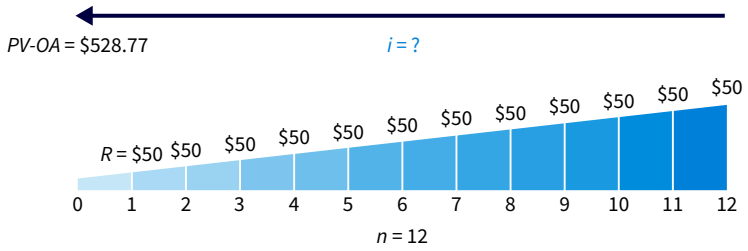
Example 5.19
Solving for the Effective-Interest Rate on a Loan

FACTS Shoppers commonly use credit cards to make purchases. When you receive the statement for payment, you may pay the total amount due or you may pay the balance in a certain number of payments. For example, assume you receive a statement from **Visa** with a balance due of $528.77. You may pay it off in 12 equal monthly payments of $50 each, with the first payment due one month from now.

QUESTION What rate of interest would you be paying?

SOLUTION

The $528.77 represents the present value of the 12 payments of $50 each at an unknown rate of interest. The following time diagram shows this situation.



You calculate the rate as follows.

$$\textbf{Present value of an ordinary annuity} = R\,(PVF\text{-}OA_{n,i})$$

$$\$528.77 = \$50\,(PVF\text{-}OA_{12,i})$$

$$(PVF\text{-}OA_{12,i}) = \frac{\$528.77}{\$50} = 10.57540$$

Referring to Table 5.4 and reading across the 12-period row, you find 10.57534 in the 2% column. Since 2% is a monthly rate, the nominal annual rate of interest is 24% (12 × .02). The effective annual rate is 26.82413 $[(1 + .02)^{12} - 1]$. Obviously, you are better off paying the entire bill now if possible.

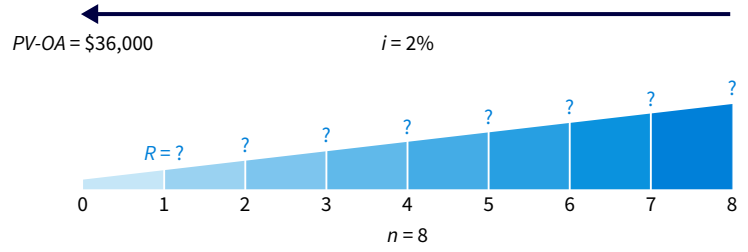
Example 5.20 Calculating the Ordinary Annuity for a College Fund

FACTS Norm and Jackie Remmers have saved $36,000 to finance their daughter Dawna's college education. They deposited the money in their local bank, where it earns 4% interest compounded semiannually.

QUESTION What equal amounts can their daughter withdraw at the end of every 6 months during her 4 college years, without exhausting the fund?

SOLUTION

The following shows a time diagram of this situation.



Determining the answer by simply dividing $36,000 by 8 withdrawals is wrong. Why? Because that ignores the interest earned on the money remaining on deposit. Dawna must consider that interest is compounded semiannually at 2% (.04 ÷ 2) for 8 periods (4 years × 2). Thus, using the same present value of an ordinary annuity formula and Table 5.4, she determines the amount of each withdrawal that she can make as follows.

$$\textbf{Present value of an ordinary annuity} = R\,(PVF\text{-}OA_{n,i})$$

$$\$36{,}000 = R\,(PVF\text{-}OA_{8,2\%})$$

$$\$36{,}000 = R\,(7.32548)$$

$$R = \$4{,}914.35$$

FACTS The Healthy Hearth Co., a maker of gluten-free breads and bagels, hopes to increase its market share in the upper Midwest. To do so, Healthy Hearth has decided to locate a new factory in Fargo, North Dakota. The company will either buy or lease a site depending upon which is more advantageous. The site location committee has narrowed down the available sites to the following three very similar alternatives that will meet their needs.

1. Building A: Purchase for $1,300,000 cash. This building is larger than needed; however, the excess space can be sublet for 25 years at a net annual rental of $14,000. Rental payments will be received at the end of each year. Healthy Hearth is happy to be a landlord.
2. Building B: Lease for 25 years with annual lease payments of $140,000 being made at the beginning of the year.
3. Building C: Purchase for a cash price of $1,200,000, useful life 25 years.

INSTRUCTIONS

Explain which alternative would you recommend for Healthy Hearth, assuming a 12% cost of funds.

SOLUTION

To select the best alternative, you would calculate the present value for each alternative as follows.

1. **Building A:**

   Rent(PV of ordinary annuity of 25 periods at 12%) = PV
   $14,000 × 7.84314 = PV
   $109,804 = PV

Cash purchase price	$1,300,000
PV of rental income	− 109,804
Net present value cost	$1,190,196

2. **Building B:**

   Rent(PV of annuity due of 25 periods at 12%) = PV
   $140,000 × 8.78432 = PV
   $1,229,805 = PV of cost

3. **Building C**:

   PV = $1,200,000 (cash cost today)

You recommend choosing the Building A alternative as the present value of its net cost is the smallest.

Put It into Practice LO 5.4
Compute the Present Value of an Ordinary Annuity and Annuity Due

5.5 Other Time Value of Money Issues

LEARNING OBJECTIVE 5

Solve present value problems related to deferred annuities, bonds, and expected cash flows.

Solving time value problems often requires using more than one table. For example, a business problem may need computations of both the present value of a single sum and the present value of an annuity. In addition, GAAP may require the use of expected cash flows in determining present value. In this section, we examine:

1. Deferred annuities.
2. Bond problems.
3. Present value measurement.

Deferred Annuities

A **deferred annuity** is an annuity in which the rents begin after a specified number of periods. A deferred annuity does not begin to produce rents until two or more periods have expired. Consider these examples.

- "An **ordinary annuity** of six annual rents deferred 4 years" means that no rents will occur during the first 4 years and that the first of the six rents will occur at the end of the fifth year.
- "An **annuity due** of six annual rents deferred 4 years" means that no rents will occur during the first 4 years and that the first of six rents will occur at the beginning of the fifth year.

Future Value of a Deferred Annuity

Computing the future value of a deferred annuity is relatively straightforward. Because there is no accumulation or investment on which interest may accrue, the future value of a deferred annuity is the same as the future value of an annuity that is not deferred. Computing the future value simply ignores the deferred period.

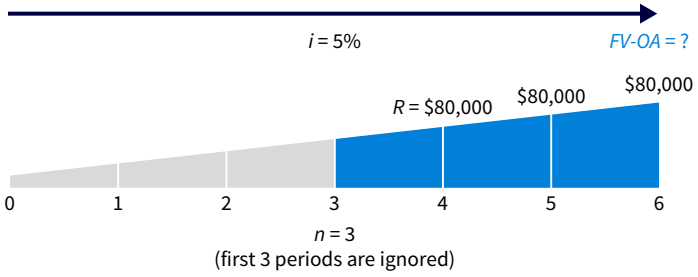
Example 5.21
Future Value of a Deferred Annuity

FACTS Sutton Corporation plans to purchase a land site in 6 years for the construction of its new corporate headquarters. Because of cash flow problems, Sutton budgets deposits of $80,000 on which it expects to earn 5% annually, only at the end of the fourth, fifth, and sixth periods.

QUESTION What future value will Sutton have accumulated at the end of the sixth year?

SOLUTION

The following shows a time diagram of this situation.



Sutton determines the value accumulated by using the standard formula for the future value of an ordinary annuity and Table 5.3 as follows.

$$\begin{aligned}\textbf{Future value of an ordinary annuity} &= R\,(FVF\text{-}OA_{n,i}) \\ &= \$80{,}000\ (FVF\text{-}OA_{3,5\%}) \\ &= \$80{,}000\ (3.15250) \\ &= \$252{,}200\end{aligned}$$

Present Value of a Deferred Annuity

Computing the present value of a deferred annuity must recognize the interest that accrues on the original investment during the deferral period. To compute the present value of a deferred annuity:

1. Compute the present value of an ordinary annuity of 1 as if the rents had occurred for the entire period.
2. Subtract the present value of rents that were not received during the deferral period.
3. The difference is the present value of the rents actually received subsequent to the deferral period.

Example 5.22 illustrates this computation, which involves the use of one interest table. The example also shows another way to perform the calculation using two interest tables.

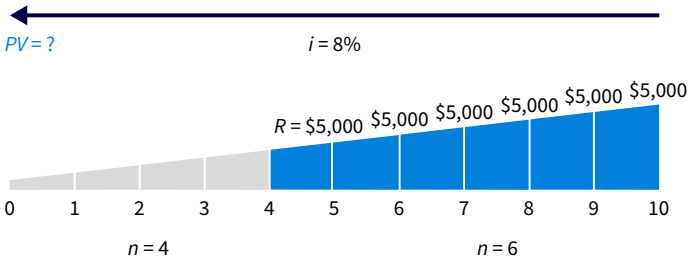
Example 5.22
Present Value of a Deferred Annuity

FACTS Bob Boyd has developed and copyrighted tutorial software for students in advanced accounting. He agrees to sell the copyright to Campus Learning Systems for six annual payments of $5,000 each. The payments will begin 5 years from today.

QUESTION Given an annual interest rate of 8%, what is the present value of the six payments?

SOLUTION

This situation is an ordinary annuity of six payments deferred 4 periods. The following time diagram shows this sales agreement.



Two options are available to solve this problem.

Option 1: Using One Table
The first option is to use Table 5.4, using the method discussed above.

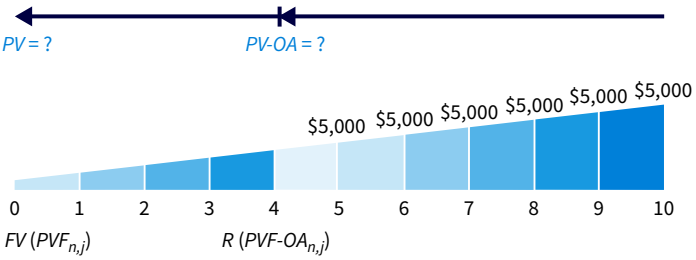
Each periodic rent		$5,000
1. Present value of an ordinary annuity of 1 for total periods (10) [number of rents (6) plus number of deferred periods (4)] at 8%	6.71008	
2. Less: Present value of an ordinary annuity of 1 for the number of deferred periods (4) at 8%	3.31213	
3. Difference		× 3.39795
Present value of 6 rents of $5,000 deferred 4 periods		$16,989.75

The subtraction of the present value of an annuity of 1 for the deferred periods eliminates the nonexistent rents during the deferral period. It converts the present value of an ordinary annuity of $1.00 for 10 periods to the present value of 6 rents of $1.00, deferred 4 periods.

Option 2: Using Two Tables
Boyd can use both Tables 5.2 and 5.4 to compute the present value of the 6 rents.

1. He can first discount the annuity 6 periods.
2. Then, because the annuity is deferred 4 periods, he must treat the present value of the annuity as a future amount to be discounted another 4 periods.

The following time diagram shows this two-step process.



Calculation using formulas would be done in two steps, as follows.

Step 1:

$$\text{Present value of an ordinary annuity} = R\,(PVF\text{-}OA_{n,i})$$
$$= \$5{,}000\,(PVF\text{-}OA_{6,8\%})$$
$$= \$5{,}000\ (4.62288)$$

(Table 5.4, Present value of an ordinary annuity)

$$= \$23{,}114.40$$

Step 2:

$$\text{Present value of a single sum} = FV\,(PVF_{n,i})$$
$$= \$23{,}114.40\ (PVF_{4,8\%})$$
$$= \$23{,}114.40\ (.73503)$$

(Table 5.2, Present value of a single sum)

$$= \$16{,}989.78$$

The present value of $16,989.78 is the same as calculated in Option 1 although computed differently. (The $0.03 difference is due to rounding.)

Valuation of Long-Term Bonds

A long-term bond produces two cash flows:

1. Periodic interest payments during the life of the bond (an annuity).
2. The principal (face value) paid at maturity.

The current market value of the bonds is the combined present values of the interest annuity and the principal amount.

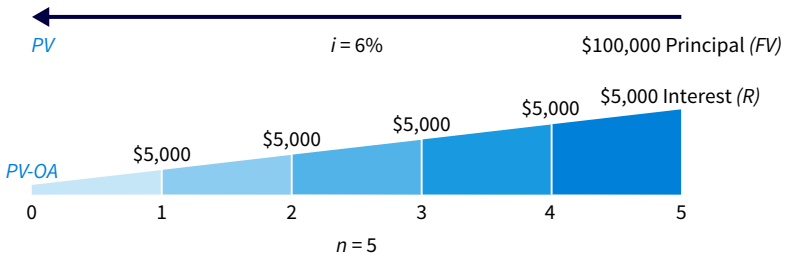
Example 5.23 Long-Term Bond Valuation

FACTS Alltech Corporation on January 1, 2025, issues $100,000 of 5% bonds due in 5 years with interest payable annually at year-end ($100,000 × .05 = $5,000). The current market rate of interest for bonds of similar risk is 6%.

QUESTION What will investors pay for this bond issue?

SOLUTION

The following time diagram shows both cash flows.



Alltech computes the present value of the two cash flows by discounting at 6%, as follows.

1. Present value of the principal: $FV\,(PVF_{5,6\%}) = \$100{,}000\ (.74726)$	$74,726.00
2. Present value of the interest payments: $R\,(PVF\text{-}OA_{5,6\%}) = \$5{,}000\ (4.21236)$	21,061.80
3. Combined present value (market price)—carrying value of bonds	$95,787.80

By paying $95,787.80 at date of issue, investors will realize an effective yield of 6% over the 5-year term of the bonds. This is true because Alltech discounted the cash flows at 6%.

Excel Solution

i	6%
n	5
PMT	–$5,000
FV	–$100,000
PV	$95,787.64

PV(rate, nper, pmt, [fv], [type])

Analytics in Action: Using Present Value for Investment Analysis

Many companies carry investments on their balance sheet, representing investments in debt and equity securities. **Alphabet, Inc.** (parent company of **Google**) reports $20.7 billion of nonmarketable investments, including investments in privately held companies. Alphabet will regularly invest in early-stage companies that are developing promising technology or products. How does Alphabet determine the value of these private companies and, ultimately, how much to invest? While the company likely employs a very complex quantitative and qualitative review, you can be certain that present value is part of its overall analysis.

There is a significant amount of judgment involved in valuing a private company; investors must estimate future revenues, costs, and cash flows along with a reasonable discount rate, which could be impacted by market and economic conditions. Given the subjectivity of such estimates, companies will often prepare a sensitivity analysis to understand how changes in the values of their assumptions will impact the estimated value of a potential investment. Analytical tools can be very useful in helping companies gain comfort over their investment decisions.

For example, consider the scenario of trying to value a potential investment based on discounted future free cash flows when there is subjectivity around both the amount of annual cash flows and the appropriate discount rate in the following chart.

	Present Value of Free Cash Flow				
	Discount Rate				
Free Cash Flow	**3.0%**	**3.5%**	**4.0%**	**4.5%**	**5.0%**
$1,500,000	$ 6,869,561	$ 6,772,579	$ 6,677,733	$ 6,584,965	$ 6,494,215
2,000,000	9,159,414	9,030,105	8,903,645	8,779,953	8,658,953
2,500,000	11,449,268	11,287,631	11,129,556	10,974,942	10,823,692
3,000,000	13,739,122	13,545,157	13,355,467	13,169,930	12,988,430
3,500,000	16,028,975	15,802,683	15,581,378	15,364,919	15,153,168

(*n = 5 in all scenarios*)

While the **best** estimate of present value is based on annual free cash flows of $2,500,000 discounted at a rate of 4%, this chart shows how present value changes with fluctuations in both future free cash flows and discount rate.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Present Value Measurement

Calculations of present value rely on an **expected cash flow approach**.[6] This approach uses a range of cash flows and incorporates the probabilities of those cash flows to provide a more relevant measurement of present value, as shown in **Illustration 5.11**.

Information:	30% probability that future cash flows will be $100		50% probability that future cash flows will be $200		20% probability that future cash flows will be $300
Expected Cash Flow:	($100 × 0.3)	+	($200 × 0.5)	+	($300 × 0.2)
			$190		

ILLUSTRATION 5.11 Example of Expected Cash Flow Approach

Choosing an Appropriate Interest Rate

After determining expected cash flows, a company must then use the proper interest rate to discount the cash flows. The interest rate used for this purpose has the following three components.

1. **Pure rate of interest (2%–4%).** The amount a lender would charge if there were no possibilities of default and no expectation of inflation.

[6] "Using Cash Flow Information and Present Value in Accounting Measurements," *Statement of Financial Accounting Concepts No. 7* (Norwalk, Conn.: FASB, 2000).

2. **Expected inflation rate of interest (0%–?).** Lenders recognize that in an inflationary economy, they are being paid back with less valuable dollars. As a result, they increase their interest rate to compensate for this loss in purchasing power. When inflationary expectations are higher, interest rates are higher.
3. **Credit risk rate of interest (0%–5%).** The government has little or no credit risk (i.e., risk of nonpayment) when it issues bonds. A business enterprise, however, depending upon its financial stability, profitability, etc., can have a low or a high credit risk.

The FASB takes the position that after computing the expected cash flows, a company should discount those cash flows by the **risk-free rate of return**.

- That rate is defined as **the pure rate of return plus the expected inflation rate**.
- The Board notes that the expected cash flow framework adjusts for credit risk because it incorporates the probability of receipt or payment into the computation of expected cash flows.
- Therefore, the rate used to discount the expected cash flows should consider only the pure rate of interest and the inflation rate.

Example 5.24
Expected Cash Flows

FACTS Al's Appliance Outlet offers a 2-year warranty on all products sold. In 2025, Al's Appliance sold $250,000 of a particular type of clothes dryer. Al's Appliance entered into an agreement with Ralph's Repair to provide all warranty service on these dryers sold in 2025.

QUESTION What is the warranty expense to record in 2025 and the amount of warranty liability to record on the December 31, 2025, balance sheet? Al's Appliance must measure the fair value of the agreement. Since there is not a ready market for these warranty contracts, Al's Appliance uses expected cash flow techniques to value the warranty obligation.

SOLUTION

Based on prior warranty experience, Al's Appliance estimates the following expected cash outflows associated with the dryers sold in 2025.

	Cash Flow Estimate	×	Probability Assessment	=	Expected Cash Flow
2025	$3,800		.20		$ 760
	6,300		.50		3,150
	7,500		.30		2,250
Total					$6,160
2026	$5,400		.30		$1,620
	7,200		.50		3,600
	8,400		.20		1,680
Total					$6,900

Applying expected cash flow concepts to these data, Al's Appliance estimates warranty cash outflows of $6,160 in 2025 and $6,900 in 2026. The present value of these cash flows, assuming a risk-free rate of 5% and cash flows occurring at the end of the year, is therefore calculated as follows.

Year	Expected Cash Flow	×	PV Factor, $i = 5\%$	=	Present Value
2025	$6,160		0.95238		$ 5,866.66
2026	6,900		0.90703		6,258.51
Total					$12,125.17

Put It into Practice LO 5.5
Analyze Time Value Decisions

FACTS Messier Company is a manufacturer of cycling equipment. It is facing several decisions involving time value of money considerations.

INSTRUCTIONS

Provide the requested information for (a)–(d) below. (Round all answers to the nearest dollar.)

a. Messier recently signed a lease for a new office building for a lease period of 10 years. Under the lease agreement, a security deposit of $12,000 is made, with the deposit to be returned at the expiration of the lease, with interest compounded at 10% per year. What amount will the company receive at the time the lease expires?

b. Recently, the vice president of operations of the company has requested construction of a new plant to meet the increasing demand for the company's bikes. After a careful evaluation of the request, the board of directors has decided to raise funds for the new plant by issuing $3,000,000 of 11% bonds on March 1, 2025, with principal due on March 1, 2040, and interest payable each March 1 and September 1. At the time of issuance, the market interest rate for similar financial instruments is 10%. Determine the selling price of the bonds.

c. The company, having issued the bonds in part (b), is committed to making annual sinking fund deposits of $90,000. The deposits are made on the last day of each year and yield a return of 10%. Will the fund at the end of 15 years be sufficient to retire the bonds? If not, what will the deficiency be?

d. Messier has 50 employees. Recently, after a long negotiation with the local labor union, the company decided to initiate a pension plan as a part of its employee compensation plan. The plan will start on January 1, 2025. Each employee covered by the plan is entitled to a pension payment each year after retirement. As required by accounting standards, the controller of the company needs to report the pension obligation (liability). The following estimates have been collected.

Average length of time to retirement	15 years
Expected life duration after retirement	10 years
Total pension payment expected each year after retirement for all employees	$800,000 per year

On the basis of the information above, determine the present value of the pension liability. Assume payment made at the end of the year and the interest rate to be used is 8%.

SOLUTION

a. Future value of $12,000 at 10% for 10 years:

$$(\$12{,}000 \times 2.59374) = \$\ 31{,}125$$

b. Formula for the interest payments*:

$$PV\text{-}OA = R\,(PVF\text{-}OA_{n,i})$$
$$PV\text{-}OA = \$165{,}000\,(PVF\text{-}OA_{30,5\%})$$
$$PV\text{-}OA = \$165{,}000\,(15.37245)$$
$$PV\text{-}OA = \$2{,}536{,}454$$

*Payments = $3,000,000 × .11 × 1/2
n = 30 (15 years × 2 semiannual periods)
i = .05 (.10 ÷ 2 periods per year)

Formula for the principal:

$$PV = FV\,(PVF_{n,i})$$
$$PV = \$3{,}000{,}000\,(PVF_{30,5\%})$$
$$PV = \$3{,}000{,}000\,(0.23138)$$
$$PV = \$694{,}140$$

The selling price of the bonds = $2,536,454 + $694,140 = $3,230,594.

c.

Future value of an ordinary annuity of $90,000 at 10% for 15 years ($90,000 × 31.77248)	$2,859,523
Deficiency ($3,000,000 − $2,859,523)	$140,477

d. Compute the value of the deferred annuity and then discount that amount to the present.

1. Present value of the expected annual pension payments at the end of the tenth year:

$$PV\text{-}OA = R\,(PVF\text{-}OA_{n,i})$$
$$PV\text{-}OA = \$800{,}000\,(PVF\text{-}OA_{10,8\%})$$
$$PV\text{-}OA = \$800{,}000\,(6.71008)$$
$$PV\text{-}OA = \$5{,}368{,}064$$

2. Present value of the expected annual pension payments at the beginning of the current year:

$$PV = FV\,(PVF_{n,i})$$
$$PV = \$5{,}368{,}064\,(PVF_{15,8\%})$$
$$PV = \$5{,}368{,}064\,(0.31524)$$
$$PV = \$1{,}692{,}228$$

The company's pension obligation (liability) is $1,692,228.

APPENDIX **5A**

Technology Tools for Time Value of Money Problems

LEARNING OBJECTIVE *6

Solve time value of money problems using Excel and financial calculators.

While it is important to understand the foundational elements of present and future value calculations shown in the chapter, business professionals will often use different technology tools to solve time value of money problems. In this appendix, we will demonstrate how to use Excel and a financial calculator for these calculations.

Using Excel to Solve Time Value of Money Problems

The use of Excel **functions**, such as present and future value, allows users to quickly solve a variety of accounting problems and offers the ability to quickly modify inputs to understand how, for example, changes in discount rate might impact the time value of money calculations. While Excel has many valuable functions, we will focus on the following.

- **Present Value (PV).** Returns the present value of a single sum and series of constant annuity payments
- **Future Value (FV).** Returns the future value of a single sum and series of constant annuity payments
- **Rate (R).** Returns the interest rate per period for a loan or investment
- **Number of Periods (NPER).** Returns the number of periods for an investment based on periodic, constant annuity payments and a constant interest rate

To access these functions, you select *formulas* > *Insert Function* from Excel's main menu.

When using Excel, each function will require some combination of the following inputs.

- **Rate.** Interest rate per period; annual rate must be adjusted if compounding is less than one year.

- **Nper.** Number of periods, which may be equal to or less than one year.
- **Pmt.** Amount of the payment made each period. If you are solving for a problem with a single sum and no annuity payment, this field can be left blank.
- **PV or FV.** Present or future value; if left blank, this amount will default to zero.
- **Type.** This represents the timing of the payment in a problem with an annuity payment.
  - **Entering 0 represents an ordinary annuity**, indicating that payments come at the end of a period. If the Type field is left blank, it will default to this value.
  - **Entering 1 represents an annuity due**, indicating that payments come at the beginning of a period.

When entering values for the payment or present or future values, it is important to be aware if the value is a cash **inflow** or **outflow** in the context of the time value of money scenario. Excel views cash inflows as positive values, while cash outflows must be entered as negative values. We have noted this in each of the examples below to help you practice identifying the inflows and outflows.

Now let's take a look at some of the examples covered in Chapter 5 and practice solving those same problems using Excel. You will see some minor differences in the solutions when solved with Excel versus with the present or future value factors. This is simply due to rounding. The factors used in the chapter are generally rounded to five decimals, whereas Excel does not round this intermediate part of the calculation.

Future and Present Value Single-Sum Problems

Let's start with the future value of a single sum.

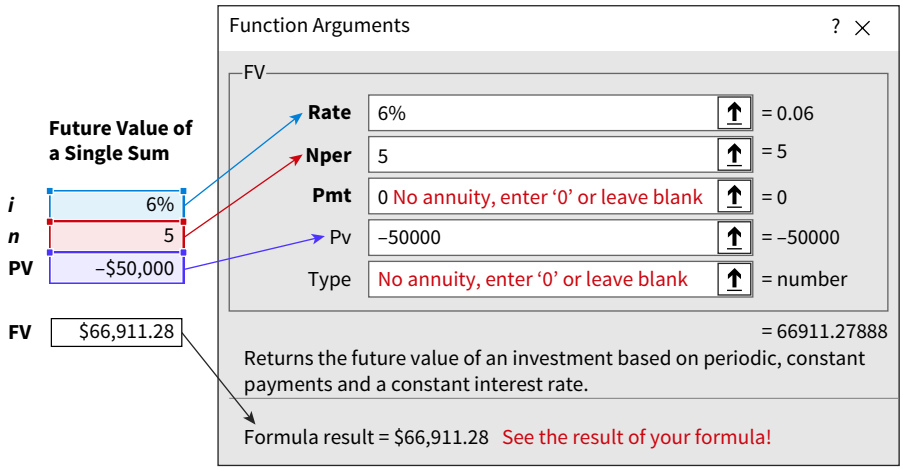
Example 5A.1
Future Value of a Single Sum

FACTS Bruegger Co. invests $50,000 for 5 years earning compounded annual interest at a rate of 6%.

QUESTION What is the value of the investment at the end of 5 years?

SOLUTION

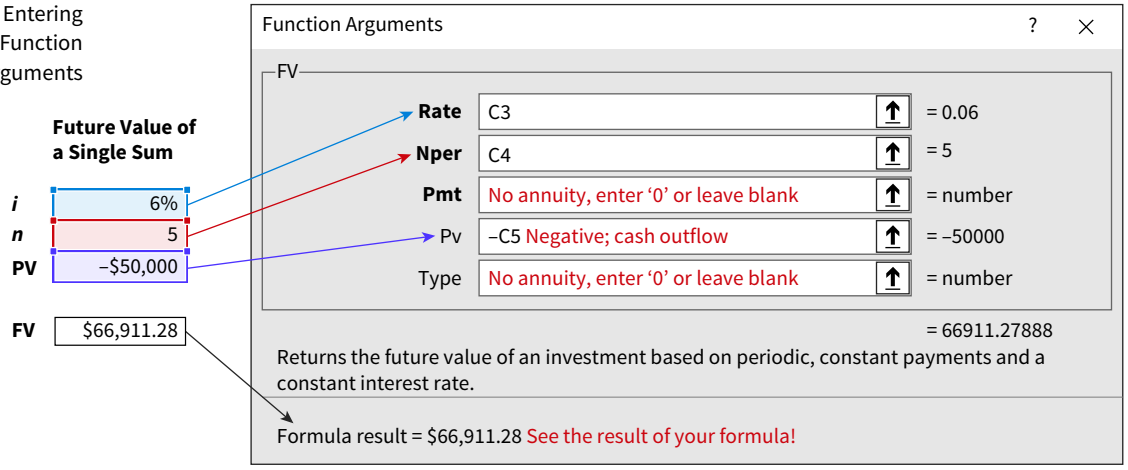
Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the future value (FV) function. Excel will walk you through the inputs using the following Function Arguments box and then show you the results of your formula. As indicated, Bruegger's investment will grow to nearly $67,000.


Future Value of a Single Sum
i 6%
n 5
PV –$50,000
FV $66,911.28
Function Arguments
FV
Rate 6% = 0.06
Nper 5 = 5
Pmt 0 No annuity, enter '0' or leave blank = 0
Pv –50000 = –50000
Type No annuity, enter '0' or leave blank = number
= 66911.27888
Returns the future value of an investment based on periodic, constant payments and a constant interest rate.
Formula result = $66,911.28 See the result of your formula!

Note that the initial investment of $50,000 is considered a cash outflow and must be entered as a negative value. The function returns a positive future value as this is deemed a cash inflow. Because this is a single-sum scenario with no annuity payment, we can leave the Pmt and Type fields blank or enter 0.

In Example 5A.1, we manually entered the input values into the Function Arguments box (e.g., for Rate, we entered 6%). As you get more comfortable using Excel, you can enter cell references into the Function Arguments, such as cell C3 as shown in **Illustration 5A.1**.

ILLUSTRATION 5A.1 Entering Cell References into Function Arguments


Future Value of a Single Sum
i 6%
n 5
PV –$50,000
FV $66,911.28
Function Arguments
FV
Rate C3 = 0.06
Nper C4 = 5
Pmt No annuity, enter '0' or leave blank = number
Pv –C5 Negative; cash outflow = –50000
Type No annuity, enter '0' or leave blank = number
= 66911.27888
Returns the future value of an investment based on periodic, constant payments and a constant interest rate.
Formula result = $66,911.28 See the result of your formula!

Using cell references allows us to easily change our inputs and see what impact that has on the formula result. Once the formula is set up, Bruegger (in Example 5A.1) could understand how the future value would change if it invested $60,000 instead of $50,000. Or, what if the annual interest rate is 4% and Bruegger invests for 6 years? As your scenarios become more complex, it is helpful to distinguish your input cells from your formula cells by highlighting, or otherwise formatting the input cells you can change. In Example 5A.1, we could highlight the cells where we input interest rate, number of periods, and present value. This allows us to see the future value under a variety of scenarios.

Once you get comfortable using functions in Excel, you can enter your function and related inputs directly into the worksheet. We will show this format throughout the text when we use time value of money in different accounting applications.

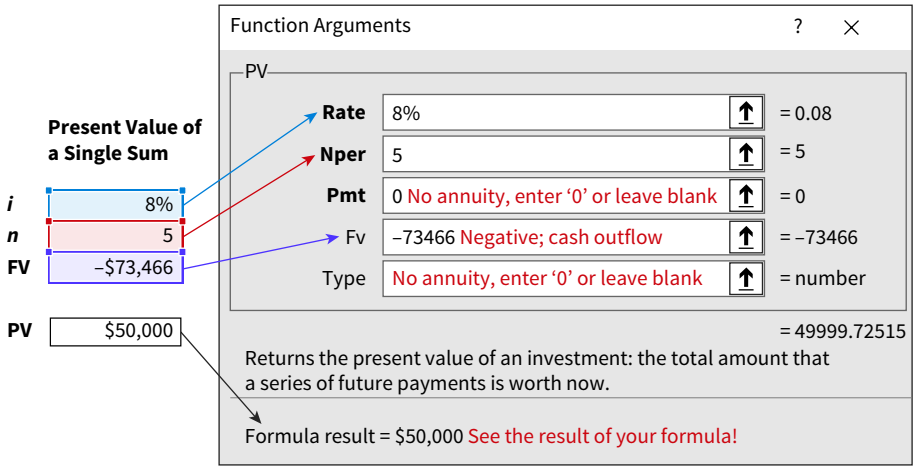
Example 5A.2 Present Value of a Single Sum

FACTS You will receive $73,466 in 5 years.

QUESTION What is the value today if the appropriate rate is 8% with annual compounding?

SOLUTION

Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the present value (PV) function. Excel will walk you through the inputs using the following Function Arguments box and then show you the result of your formula.


Present Value of a Single Sum
i 8%
n 5
FV –$73,466
PV $50,000
Function Arguments
PV
Rate 8% = 0.08
Nper 5 = 5
Pmt 0 No annuity, enter '0' or leave blank = 0
Fv –73466 Negative; cash outflow = –73466
Type No annuity, enter '0' or leave blank = number
= 49999.72515
Returns the present value of an investment: the total amount that a series of future payments is worth now.
Formula result = $50,000 See the result of your formula!

As indicated, the present value is $50,000. Note the future value is considered a cash outflow and must be entered as a negative value. The function returns a positive present value as this is the original cash value. Because this is a single-sum scenario, we can leave the Pmt and Type fields blank or enter 0.

Again, as you become comfortable with Excel, you will be able to set up your present value function such that it links directly to each of the inputs (rate, periods, future value), allowing you to modify the inputs and evaluate the impact on your present value.

Solving for Other Unknowns in Single-Sum Problems

We can use Excel to solve for other components of a time value of money scenario, like the number of periods or interest rate.

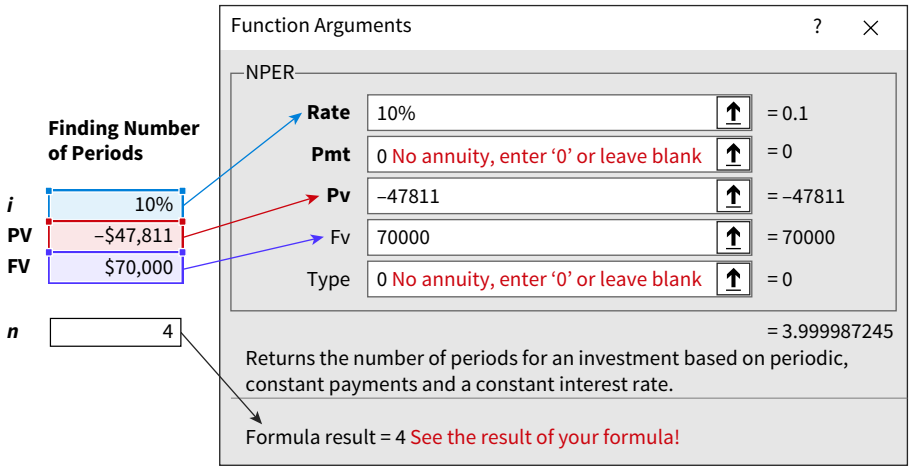
Example 5A.3
Computing the Number of Periods

FACTS The Village of Somonauk wants to accumulate $70,000 for the construction of a veterans' monument in the town square. At the beginning of the current year, the Village deposited $47,811 in a memorial fund that earns 10% interest compounded annually.

QUESTION How many years will it take to accumulate $70,000 in the memorial fund?

SOLUTION

Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the number of periods (NPER) function. Excel will walk you through the inputs in the following Function Arguments box and then show you the result of your formula.


Finding Number of Periods
i 10%
PV –$47,811
FV $70,000
n 4
Function Arguments
NPER
Rate 10% = 0.1
Pmt 0 No annuity, enter '0' or leave blank = 0
Pv –47811 = –47811
Fv 70000 = 70000
Type 0 No annuity, enter '0' or leave blank = 0
= 3.999987245
Returns the number of periods for an investment based on periodic, constant payments and a constant interest rate.
Formula result = 4 See the result of your formula!

As indicated, the number of periods is 4. As we saw with the single-sum future and present value calculations, both the Pmt and Type inputs can be left blank or entered as zero. In this example, the initial deposit is a cash outflow that will be entered as a negative value. The future value of $70,000 is a cash inflow and should be entered as a positive value.

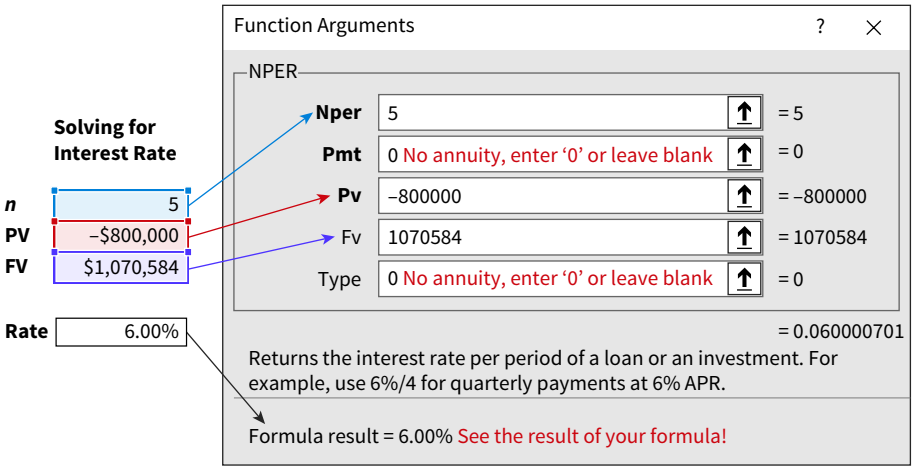
Example 5A.4
Solve for the Interest Rate

FACTS Assume that **Amazon** needs $1,070,584 5 years from now to purchase electric scooters for employees in its new HQ2 location. The company currently has $800,000 to invest for that purpose.

QUESTION At what rate of interest must Amazon invest the $800,000 to pay for the electric scooters in the amount of $1,070,584, 5 years from now?

SOLUTION

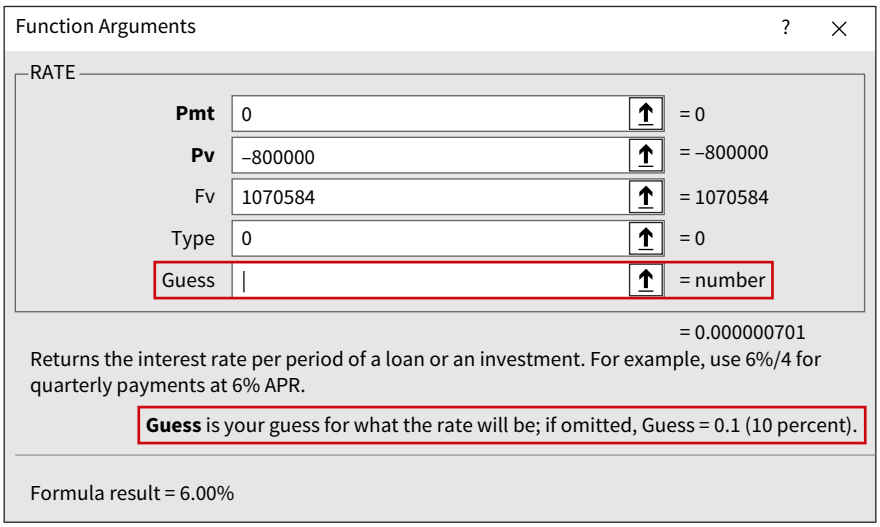
Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the rate (RATE) function. Excel will walk you through the inputs shown in the following Function Arguments box and then show you the result of the formula.



In this case, solving for the rate yields 6%. As with previous examples, we have no annuity payment, so the Pmt and Type inputs are left blank. In this scenario, the initial investment of $800,000 represents a cash outflow and must be entered as a negative value. The future value represents the value of Amazon's investment after earning interest for 5 years and should be entered as a positive cash inflow.

Within the Function Arguments box for the Rate function, we can scroll down for one additional (optional) input. As shown in **Illustration 5A.2**, Excel allows you to enter a *Guess* of what the rate will be. Although this field is optional and often left blank, providing a value here gives Excel a starting point from which the rate function can begin so that it may converge on an answer that is accurate within a very small margin. If Excel cannot converge on an answer within this margin after 20 iterations, it will not return a result on the function. The user must then enter a different *Guess*.

ILLUSTRATION 5A.2 Optional Guess Field



Annuities

In each of the previous examples, we had a present value, future value, or both, but no annuity payment. The next two examples will show how you can use Excel to solve for the future or present value of an annuity.

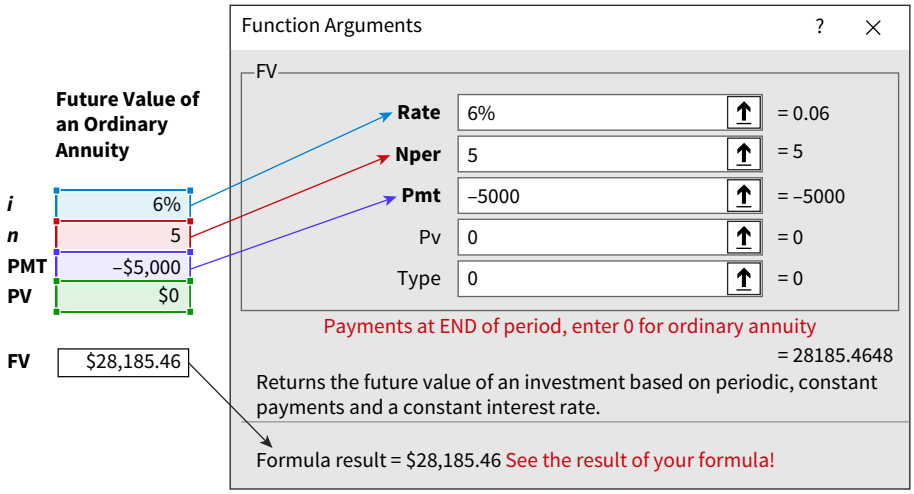
Example 5A.5
Future Value of an Ordinary Annuity

FACTS You plan to make five $5,000 deposits made at the end of each of the next 5 years, earning interest of 6%.

QUESTIONS (a) What is the future value of these five deposits? (b) Repeat the requirements for (a), assuming payments occur at the beginning of the period.

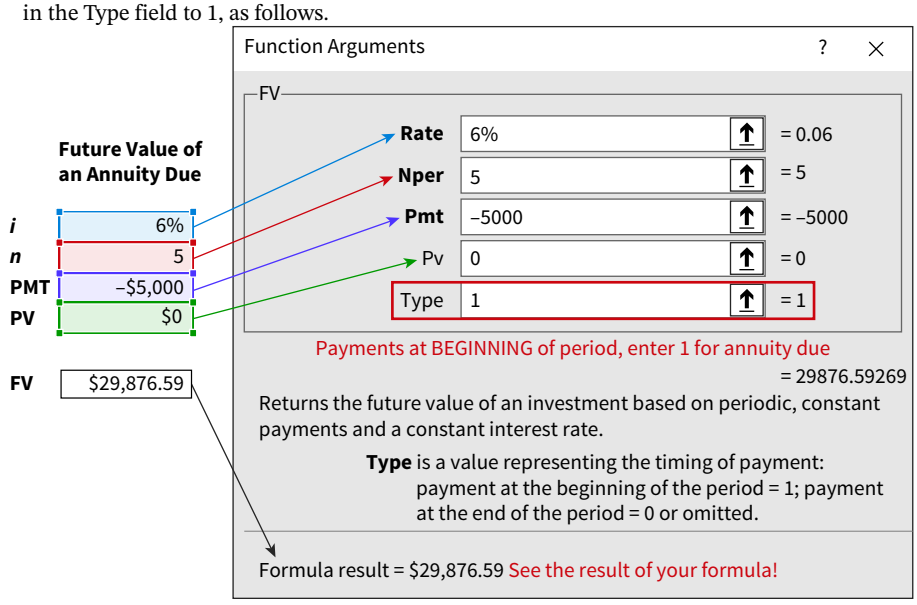
SOLUTION

a. Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the future value (FV) function. Excel will walk you through the inputs using the following Function Arguments box and then show you the results of the formula.


Future Value of an Ordinary Annuity
i 6%
n 5
PMT –$5,000
PV $0
FV $28,185.46
Function Arguments
FV
Rate 6% = 0.06
Nper 5 = 5
Pmt –5000 = –5000
Pv 0 = 0
Type 0 = 0
Payments at END of period, enter 0 for ordinary annuity
= 28185.4648
Returns the future value of an investment based on periodic, constant payments and a constant interest rate.
Formula result = $28,185.46 See the result of your formula!

As indicated, the future value of this annuity is $28,185. Note that the annuity payments are considered a cash outflow and must be entered as a negative value. The payments are made at the end of each period, so we enter 0 in the Type field to indicate an ordinary annuity (if we left the Type field blank, Excel would default to an ordinary annuity). The function returns a positive future value as this is deemed a cash inflow.

b. If we change our facts to indicate that the five $5,000 deposits are made at the **beginning** of each period, we can easily calculate the future value of an annuity due by changing the value in the Type field to 1, as follows.


Future Value of an Annuity Due
i 6%
n 5
PMT –$5,000
PV $0
FV $29,876.59
Function Arguments
FV
Rate 6% = 0.06
Nper 5 = 5
Pmt –5000 = –5000
Pv 0 = 0
Type 1 = 1
Payments at BEGINNING of period, enter 1 for annuity due
= 29876.59269
Returns the future value of an investment based on periodic, constant payments and a constant interest rate.
Type is a value representing the timing of payment: payment at the beginning of the period = 1; payment at the end of the period = 0 or omitted.
Formula result = $29,876.59 See the result of your formula!

With payments at the beginning of the period, the future value increases to $29,877.

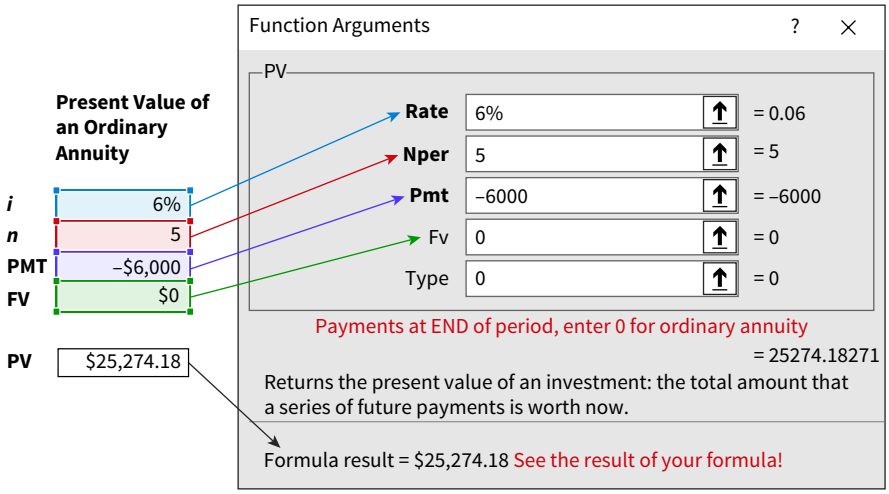
Example 5A.6
Present Value of an Ordinary Annuity

FACTS You wish to determine the value today of receiving rental receipts of $6,000 each at the end of each of the next 5 years when discounted at 6%.

QUESTIONS (a) What is the present value of these future receipts? (b) What is the present value of the payments, assuming payments occur at the beginning of the period?

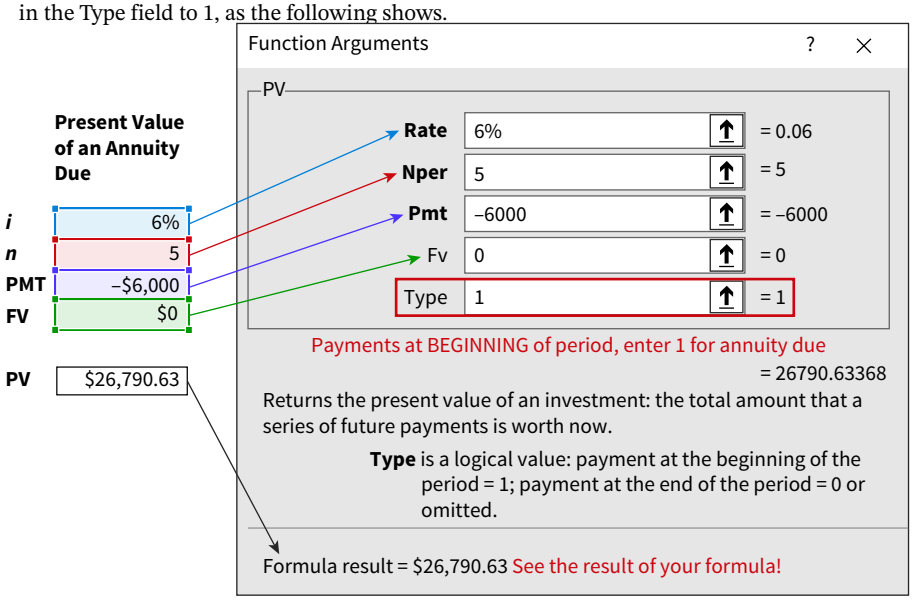
SOLUTION

a. Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the present value (PV) function. Excel will walk you through the inputs using the following Function Arguments box and then show you the result of the formula.


Present Value of an Ordinary Annuity
i 6%
n 5
PMT –$6,000
FV $0
PV $25,274.18
Function Arguments
PV
Rate 6% = 0.06
Nper 5 = 5
Pmt –6000 = –6000
Fv 0 = 0
Type 0 = 0
Payments at END of period, enter 0 for ordinary annuity
= 25274.18271
Returns the present value of an investment: the total amount that a series of future payments is worth now.
Formula result = $25,274.18 See the result of your formula!

The present value is $25,274. Note that the annuity payments are considered a cash outflow and must be entered as a negative value. The payments are made at the end of each period, so we enter 0 in the Type field to indicate an ordinary annuity. The function returns a positive present value as this is deemed a cash inflow.

b. If we change our facts to indicate that the five $6,000 receipts are made at the **beginning** of each period, we can easily calculate the present value of an annuity due by changing the value in the Type field to 1, as the following shows.


Present Value of an Annuity Due
i 6%
n 5
PMT –$6,000
FV $0
PV $26,790.63
Function Arguments
PV
Rate 6% = 0.06
Nper 5 = 5
Pmt –6000 = –6000
Fv 0 = 0
Type 1 = 1
Payments at BEGINNING of period, enter 1 for annuity due
= 26790.63368
Returns the present value of an investment: the total amount that a series of future payments is worth now.
Type is a logical value: payment at the beginning of the period = 1; payment at the end of the period = 0 or omitted.
Formula result = $26,790.63 See the result of your formula!

As indicated, the present value with payments occurring at the beginning of the period is $26,791.

Long-Term Bond Example

Now let's take a look at a comprehensive example that combines the calculations for present value of a single sum and present value of an annuity into one function.

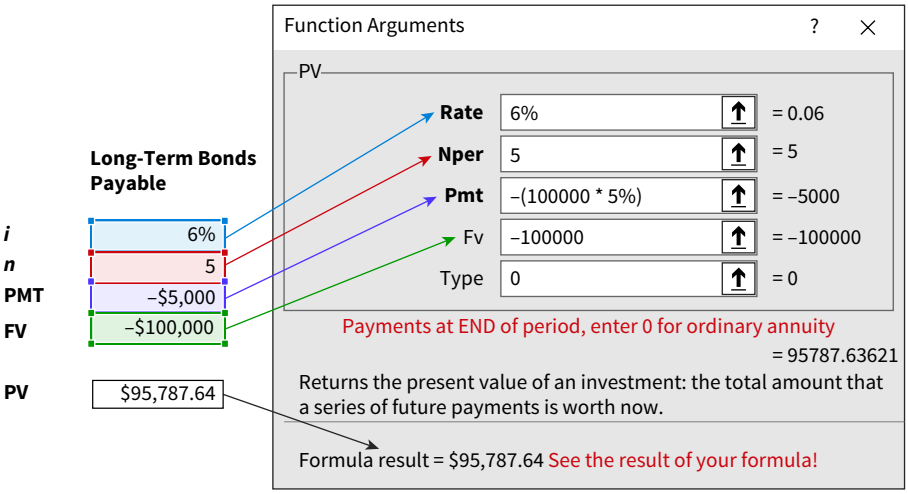
Example 5A.7
Long-Term Bond Valuation

FACTS Alltech Corporation on January 1, 2025, issues $100,000 of 5% bonds due in 5 years with interest payable annually at year-end ($100,000 × .05 = $5,000). The current market rate of interest for bonds of similar risk is 6%.

QUESTION What will investors pay for this bond issue?

SOLUTION

Using Excel, navigate to the Formulas tab, select Insert Function, and then choose the present value (PV) function. Excel will walk you through the inputs in the following Function Arguments box and then show you the result of the formula.


Long-Term Bonds Payable
i 6%
n 5
PMT –$5,000
FV –$100,000
PV $95,787.64
Function Arguments
PV
Rate 6% = 0.06
Nper 5 = 5
Pmt –(100000 * 5%) = –5000
Fv –100000 = –100000
Type 0 = 0
Payments at END of period, enter 0 for ordinary annuity
= 95787.63621
Returns the present value of an investment: the total amount that a series of future payments is worth now.
Formula result = $95,787.64 See the result of your formula!

In this situation, investors will pay $95,788 for these bonds. Note that the annuity payments and future value are considered cash outflows and must be entered as negative values. The formula results in a positive present value, representing a cash inflow. Here, too, we see a real advantage of using Excel: we are able to combine the present value of a single sum and present value of an annuity into one calculation.

Using Financial Calculators to Solve Time Value of Money Problems

Another commonly used tool for time value of money problems is a financial (or business) calculator. The concepts and terminology are very consistent with Excel. The five most common keys used to solve time value of money problems are shown in Illustration 5A.3. As we just did using Excel functions, we'll take a look at some of the examples covered in Chapter 5 and practice solving those same problems using a financial calculator.

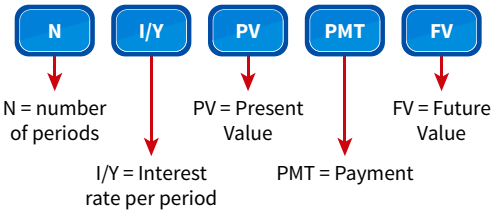


ILLUSTRATION 5A.3 Financial Calculator Time Value Keys

Future and Present Value Single-Sum Problems

Let's start with future and present value single-sum problems.

Example 5A.8
Future Value of a Single Sum

FACTS Bruegger Co. invests $50,000 for 5 years earning compounded annual interest at a rate of 6%.

QUESTION What is the value of the investment at the end of 5 years?

SOLUTION

Using your financial calculator, enter the inputs shown below. Consistent with our approach in Excel, the initial investment of $50,000 is considered a cash outflow and must be entered as a negative value. The calculator will return an answer that is positive ($66,911), representing a cash inflow.

Inputs	5	6	−50,000	0	?
	N	I/Y	PV	PMT	FV
Answer					66,911.28

In Example 5A.8, we assumed that compounding occurs once a year. Some financial calculators have a default setting, which assumes compounding occurs 12 times a year. You must determine what default period has been programmed into your calculator and change it as necessary to arrive at the proper compounding period.

Example 5A.9
Present Value of a Single Sum

FACTS You will receive $73,466 in 5 years.

QUESTION What is the value today if the appropriate rate is 8% with annual compounding?

SOLUTION

Using your financial calculator, enter the inputs shown below. In this scenario, the future value is considered a cash outflow and must be entered as a negative value. The calculator will return a present value that is positive ($50,000), representing a cash inflow.

Inputs	5	8	?	0	−73,466
	N	I/Y	PV	PMT	FV
Answer			49,999.73		

Solving for Other Unknowns in Single-Sum Problems

Just like we did for Excel, we can use financial calculators to solve for other unknowns in time value of money problems.

Example 5A.10
Computing the Number of Periods

FACTS The Village of Somonauk wants to accumulate $70,000 for the construction of a veterans' monument in the town square. At the beginning of the current year, the Village deposited $47,811 in a memorial fund that earns 10% interest compounded annually.

QUESTION How many years will it take to accumulate $70,000 in the memorial fund?

SOLUTION

Using your financial calculator, enter the inputs shown below. The initial deposit is deemed a cash outflow and must be entered as a negative value. There are no annuity payments, so we must enter a zero for the PMT field. We can then solve for the number of periods, which is 4.

Inputs	?	10	−47,811	0	70,000
	N	I/Y	PV	PMT	FV
Answer	4				

Example 5A.11
Solve for the Interest Rate

FACTS Assume that **Amazon** needs $1,070,584 5 years from now to purchase electric scooters for employees in its new HQ2 location. It currently has $800,000 to invest for that purpose.

QUESTION At what rate of interest must Amazon invest the $800,000 to pay for the electric scooters in the amount of $1,070,584, 5 years from now?

SOLUTION

Using your financial calculator, enter the inputs shown below and solve for the interest rate (6% in this case).

	N	I/Y	PV	PMT	FV
Inputs	5	?	–800,000	0	1,070, 584
Answer		6.000070			

Note that the present value of $800,000 is deemed a cash outflow and must be entered as a negative value. We must enter a zero for the payment as there is no annuity payment in this scenario.

Annuities

We can use our financial calculator when solving for scenarios with an annuity payment. Similar to Excel, the default setting on most financial calculators will be an ordinary annuity, meaning the calculator will return a value assuming payments come at the end of each period. While individual calculators may vary, all will have the option of calculating a time value of money problem in begin (BGN) or END mode. For an annuity with payments at the beginning of each period, it is very important that you change to BGN mode to calculate the value of an annuity due.

Example 5A.12
Future Value of an Ordinary Annuity

FACTS You plan to make five $5,000 deposits made at the end of each of the next 5 years, earning interest of 6%.

QUESTION What is the future value of these five deposits?

SOLUTION

Using your financial calculator in END mode, enter the inputs shown below and solve for the future value (in this situation, $28,185).

	N	I/Y	PV	PMT	FV
					END mode
Inputs	5	6	0	–5,000	?
Answer					28,185.46

Note that the annuity payments are considered cash outflows and should be entered as a negative value. We have no beginning value, so the present value is zero.

To practice moving your calculator to BGN mode to reflect an annuity payment at the beginning of each period, assume that you plan to make five $5,000 deposits at the **beginning** of each of the next 5 years, earning interest of 6%. What will your future value of these five deposits be in this scenario? As shown, the future value of the stream of annuity payments at the beginning of the period returns a value of $29,876.59.

	N	I/Y	PV	PMT	FV
					BGN mode
Inputs	5	6	0	–5,000	?
Answer					29,876.59

We can use the same process as we just used for future values and apply it to a present value example.

Example 5A.13
Present Value of an Ordinary Annuity

FACTS You wish to determine the value today of receiving rental receipts of $6,000 each at the end of each of the next 5 years when discounted at 6%.

QUESTION What is the present value of these future receipts?

SOLUTION

Using your financial calculator in END mode, enter the inputs below and solve for the present value. The annuity receipts must be entered as negative values, and we must enter a future value of zero. Your calculator will then return a positive present value of the $6,000 annuity payments ($26,791).

END mode

	N	I/Y	PV	PMT	FV
Inputs	5	6	?	−6,000	0
Answer			25,274.18		

Similar to the future value annuity problems, if we change the facts of the scenario in Example 5A.13 to assume that the $6,000 rental receipts are received at the **beginning** of each period, we can put our calculator into BGN mode to calculate the present value of an annuity due of $26,790.63.

BGN mode

	N	I/Y	PV	PMT	FV
Inputs	5	6	?	−6,000	0
Answer			26,790.63		

Long-Term Bond Example

Let's look at one final example using a financial calculator. Just as we did with Excel, we can use a financial calculator to value a long-term bond. In determining the value of a long-term bond, we must calculate the present value of both a single-sum and an annuity. We can do this in one combined calculation using our calculator.

Example 5A.14
Long-Term Bond Valuation

FACTS Alltech Corporation on January 1, 2025, issues $100,000 of 5% bonds due in 5 years with interest payable annually at year-end ($100,000 × .05 = $5,000). The current market rate of interest for bonds of similar risk is 6%.

QUESTION What will investors pay for this bond issue?

SOLUTION

Using your financial calculator in END mode, enter the inputs shown below and solve for the present value. Both the interest payments and future value must be entered as negative values. Your calculator will return a present value of $95,787.64.

END mode

	N	I/Y	PV	PMT	FV
Inputs	5	6	?	−5,000	−100,000
Answer			95,787.64		

Benefits of Using Technology Tools

Using technology to help solve time value of money problems can be very valuable and not just for your intermediate accounting course. As you get more comfortable using these tools, you can apply them to many scenarios in your personal life. Any time you borrow money,

whether it is to buy a new car or your first home, understanding how interest rates, time, or down payment will affect your monthly payment obligation can be very useful. Also, it is never too early to start saving for retirement; understanding the impact of interest rates and early investing on the future value of your nest egg can be quite motivating! While using these tools may be cumbersome to start, with just a little practice, you will gain confidence and begin to see how powerful they can be.

Review and Practice

Key Terms Review

annuity 5-14
annuity due 5-14
compound interest 5-4
deferred annuity 5-28
discounting 5-8
effective yield 5-7
expected cash flow approach 5-31
face rate 5-7
future value 5-8
future value of an annuity 5-14
interest 5-3
nominal rate 5-7
ordinary annuity 5-14
present value 5-8
principal 5-3
risk-free rate of return 5-32
simple interest 5-3
stated rate 5-7
time value of money 5-2

Learning Objectives Review

1 Describe the fundamental concepts related to the time value of money.

Some of the **applications of present value–based measurements** to accounting topics are (1) notes, (2) leases, (3) pensions and other postretirement benefits, (4) long-term assets, (5) sinking funds, (6) business combinations, (7) disclosures, and (8) installment contracts. See items 1 and 2 in the following Fundamental Concepts box for the distinctions between simple and compound interest.

In order to identify which of the **five compound interest tables** to use, determine whether you are solving for (1) the future value of a single sum, (2) the present value of a single sum, (3) the future value of a series of sums (an annuity), or (4) the present value of a series of sums (an annuity). In addition, when a series of sums (an annuity) is involved, identify whether these sums are received or paid (1) at the beginning of each period (annuity due) or (2) at the end of each period (ordinary annuity).

The following **four variables are fundamental to all compound interest problems.** (1) *Rate of interest:* unless otherwise stated, an annual rate, adjusted to reflect the length of the compounding period if less than a year. (2) *Number of time periods:* the number of compounding periods (a period may be equal to or less than a year). (3) *Future value:* the value at a future date of a given sum or sums invested assuming compound interest. (4) *Present value:* the value now (present time) of a future sum or sums discounted assuming compound interest.

2 Solve future and present value of 1 problems.

See items 5(a) and 6(a) in the following Fundamental Concepts box.

3 Solve future value of ordinary and annuity due problems.

See item 5(b) in the following Fundamental Concepts box.

4 Solve present value of ordinary and annuity due problems.

See item 6(b) in the following Fundamental Concepts box.

5 Solve present value problems related to deferred annuities, bonds, and expected cash flows.

Deferred annuities are annuities in which rents begin after a specified number of periods. The future value of a deferred annuity is computed the same as the future value of an annuity not deferred. To find the present value of a deferred annuity, compute the present value of an ordinary annuity of 1 as if the rents had occurred for the entire period, and then subtract the present value of rents not received during the deferral period. The **expected cash flow approach** uses a range of cash flows and the probabilities of those cash flows to provide the most likely estimate of expected cash flows. The proper interest rate used to discount the cash flows is the risk-free rate of return.

*6 Solve time value of money problems using Excel and financial calculators.

Excel or financial calculators can be used to solve time value of money problems. By entering the amounts for all but one of the unknown

inputs (periods, interest rate, payments, future or present value), these technology tools can be used the solve the same and additional problems as those solved with time value of money tables. Particularly useful situations involve interest rates and compounding periods not presented in these tables. Excel is also useful in conducting sensitivity analysis in time value of money problems.

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Fundamental Concepts

1. Simple interest. Interest on principal only, regardless of interest that may have accrued in the past.

2. Compound interest. Interest accrues on the unpaid interest of past periods as well as on the principal.

3. Rate of interest. Interest is usually expressed as an annual rate, but when the compounding period is shorter than one year, the interest rate for the shorter period must be determined.

4. Annuity. A series of payments or receipts (called rents) that occur at equal intervals of time. Types of annuities:

- **a. Ordinary annuity.** Each rent is payable (receivable) at the end of the period.
- **b. Annuity due.** Each rent is payable (receivable) at the beginning of the period.

5. Future value. Value at a later date of a single sum that is invested at compound interest.

- **a. Future value of 1** (or value of a single sum). The future value of $1 (or a single given sum), *FV*, at the end of *n* periods at *i* compound interest rate (Table 5.1).
- **b. Future value of an annuity.** The future value of a series of rents invested at compound interest. In other words, the accumulated total that results from a series of equal deposits at regular intervals invested at compound interest. Both deposits and interest increase the accumulation.
  1. **Future value of an ordinary annuity.** The future value on the date of the last rent (Table 5.3).
  2. **Future value of an annuity due.** The future value one period after the date of the last rent. When an annuity due table is not available, use Table 5.3 with the following formula:

$$\text{Value of annuity due of 1 for } n \text{ rents} = (\text{Value of ordinary annuity for } n \text{ rents}) \times (1 + \text{interest rate})$$

6. Present value. The value at an earlier date (usually now) of a given future sum discounted at compound interest.

- **a. Present value of 1** (or present value of a single sum). The present value (worth) of $1 (or a given sum), due *n* periods hence, discounted at *i* compound interest (Table 5.2).
- **b. Present value of an annuity.** The present value (worth) of a series of rents discounted at compound interest. In other words, it is the sum when invested at compound interest that will permit a series of equal withdrawals at regular intervals.
  1. **Present value of an ordinary annuity.** The value now of $1 to be received or paid at the end of each period (rents) for *n* periods, discounted at *i* compound interest (Table 5.4).
  2. **Present value of an annuity due.** The value now of $1 to be received or paid at the beginning of each period (rents) for *n* periods, discounted at *i* compound interest (Table 5.5). To use Table 5.4 for an annuity due, apply this formula:

$$\text{Present value of annuity due of 1 for } n \text{ rents} = (\text{Present value of an ordinary annuity of } n \text{ rents}) \times (1 + \text{interest rate})$$

Exercises, Problems, Problem Solution Walkthrough Videos, Data Analytics Activities, and many more assessment tools and resources are available for practice in Wiley Course Resources.

Questions

1. What is the time value of money? Why should accountants have an understanding of compound interest, annuities, and present value concepts?

2. Identify three situations in which accounting measures are based on present values. Do these present value applications involve single sums or annuities, or both single sums and annuities? Explain.

3. What is the nature of interest? Distinguish between "simple interest" and "compound interest."

4. What are the components of an interest rate? Why is it important for accountants to understand these components?

5. The following are a number of values taken from compound interest tables involving the same number of periods and the same rate of interest. Indicate what each of these four values represents.

- **a.** 6.71008.
- **b.** 2.15892.
- **c.** .46319.
- **d.** 14.48656.

6. Jose Oliva is considering two investment options for a $1,500 gift he received for graduation. Both investments have 8% annual interest rates. One offers quarterly compounding; the other compounds on a semiannual basis. Which investment should he choose? Why?

7. Regina Henry deposited $20,000 in a money market certificate that provides interest of 10% compounded quarterly if the amount is maintained for 3 years. How much will Regina have at the end of 3 years?

8. Will Smith will receive $80,000 5 years from now, from a trust fund established by his father. Assuming the appropriate interest rate for discounting is 12% (compounded semiannually), what is the present value of this amount today?

9. What are the primary characteristics of an annuity? Differentiate between an "ordinary annuity" and an "annuity due."

10. Kehoe, Inc. owes $40,000 to Ritter Company. How much would Kehoe have to pay each year if the debt is retired through four equal payments (made at the end of the year), given an interest rate on the debt of 12%? (Round to two decimal places.)

11. The Kellys are planning for a retirement home. They estimate they will need $200,000 4 years from now to purchase this home. Assuming an interest rate of 10%, what amount must be deposited at the end of each of the 4 years to fund the home price? (Round to two decimal places.)

12. Assume the same situation as in Question 11, except that the four equal amounts are deposited at the beginning of the period rather than at the end. In this case, what amount must be deposited at the beginning of each period? (Round to two decimals.)

13. Explain how the future value of an ordinary annuity interest table is converted to the future value of an annuity due interest table.

14. Explain how the present value of an ordinary annuity interest table is converted to the present value of an annuity due interest table.

15. In a book named *Treasure,* the reader has to figure out where a 2.2 pound, 24 kt gold horse has been buried. If the horse is found, a prize of $25,000 a year for 20 years is provided. The actual cost to the publisher to purchase an annuity to pay for the prize is $245,000. What interest rate (to the nearest percent) was used to determine the amount of the annuity? (Assume end-of-year payments.)

16. Alexander Enterprises leases property to Hamilton, Inc. Because Hamilton is experiencing financial difficulty, Alexander agrees to receive five rents of $20,000 at the end of each year, with the rents deferred 3 years. What is the present value of the five rents discounted at 12%?

17. Answer the following questions.

a. On May 1, 2025, Goldberg Company sold some machinery to Newlin Company on an installment contract basis. The contract required five equal annual payments, with the first payment due on May 1, 2025. What present value concept is appropriate for this situation?

b. On June 1, 2025, Seymour Inc. purchased a new machine that it does not have to pay for until June 1, 2027. The total payment on June 1, 2027, will include both principal and interest. Assuming interest at a 12% rate, the cost of the machine would be the total payment multiplied by what time value of money concept?

c. Costner Inc. wishes to know how much money it will have available in 5 years if five equal amounts of $35,000 are invested, with the first amount invested immediately. What interest table is appropriate for this situation?

d. Megan Hoffman invests in a "jumbo" $200,000, 3-year certificate of deposit at First Wisconsin Bank. What table would be used to determine the amount accumulated at the end of 3 years?

18. Recently, Glenda Estes was interested in purchasing a Honda Acura. The salesperson indicated that the price of the car was either $27,600 cash or $6,900 at the end of each of 5 years. Compute the effective-interest rate to the nearest percent that Glenda would pay if she chooses to make the five annual payments.

19. Property/casualty insurance companies have been criticized because they reserve for the total loss as much as 5 years before it may happen. The IRS has joined the debate because it says the full reserve is unfair from a taxation viewpoint. What can explain the IRS position?

Brief Exercises

(Unless instructed otherwise, round answers to the nearest dollar.)

BE5.1 (LO 2) Chris Spear invested $15,000 today in a fund that earns 8% compounded annually. To what amount will the investment grow in 3 years? To what amount would the investment grow in 3 years if the fund earns 8% annual interest compounded semiannually?

BE5.2 (LO 2) Tony Bautista needs $25,000 in 4 years. What amount must he invest today if his investment earns 12% compounded annually? What amount must he invest if his investment earns 12% annual interest compounded quarterly?

BE5.3 (LO 2) Candice Willis will invest $30,000 today. She needs $150,000 in 21 years. What annual interest rate must she earn?

BE5.4 (LO 2) Bo Newman will invest $10,000 today in a fund that earns 5% annual interest. How many years will it take for the fund to grow to $17,100?

BE5.5 (LO 3) Sally Medavoy will invest $8,000 a year for 20 years in a fund that will earn 6% annual interest. If the first payment into the fund occurs today, what amount will be in the fund in 20 years? If the first payment occurs at year-end, what amount will be in the fund in 20 years?

BE5.6 (LO 3) Steve Madison needs $250,000 in 10 years. How much must he invest at the end of each year, at 5% interest, to meet his needs?

BE5.7 (LO 2) John Fillmore's lifelong dream is to own his own fishing boat to use in his retirement. John has recently come into an inheritance of $400,000. He estimates that the boat he wants will cost $300,000 when he retires in 5 years. How much of his inheritance must he invest at an annual rate of 8% (compounded annually) to buy the boat at retirement?

BE5.8 (LO 2) Refer to the data in BE5.7. Assuming quarterly compounding of amounts invested at 8%, how much of John Fillmore's inheritance must be invested to have enough at retirement to buy the boat?

BE5.9 (LO 3) Morgan Freeman is investing $9,069 at the end of each year in a fund that earns 5% interest. In how many years will the fund be at $100,000?

BE5.10 (LO 4) Henry Quincy wants to withdraw $30,000 each year for 10 years from a fund that earns 8% interest. How much must he invest today if the first withdrawal is at year-end? How much must he invest today if the first withdrawal takes place immediately?

BE5.11 (LO 4) Leon Tyler's VISA balance is $793.15. He may pay it off in 12 equal end-of-month payments of $75 each. What interest rate is Leon paying?

BE5.12 (LO 4) Maria Alvarez is investing $300,000 in a fund that earns 4% interest compounded annually. What equal amounts can Maria withdraw at the end of each of the next 20 years?

BE5.13 (LO 3) Adams Inc. will deposit $30,000 in a 6% fund at the end of each year for 8 years beginning December 31, 2025. What amount will be in the fund immediately after the last deposit?

BE5.14 (LO 4) Amy Monroe wants to create a fund today that will enable her to withdraw $25,000 per year for 8 years, with the first withdrawal to take place 5 years from today. If the fund earns 8% interest, how much must Amy invest today?

BE5.15 (LO 5) Clancey Inc. issues $2,000,000 of 7% bonds due in 10 years with interest payable at year-end. The current market rate of interest for bonds of similar risk is 8%. What amount will Clancey receive when it issues the bonds?

BE5.16 (LO 4) Zach Taylor is settling a $20,000 loan due today by making 6 equal annual payments of $4,727.53. Determine the interest rate on this loan, if the payments begin one year after the loan is signed.

BE5.17 (LO 4) Consider the loan in BE5.16. What payments must Zach Taylor make to settle the loan at the same interest rate but with the 6 payments beginning on the day the loan is signed?

***BE 5.18 (LO 6)** Stella's Bakery is planning for future expansion by investing $30,000 now into a fund that earns interest at an annual rate of 7%, compounded annually. Determine how much Stella's will have 5 years from now to purchase a new commercial oven, using the FV function in Excel or a financial calculator.

***BE 5.19 (LO 6)** Stella's Bakery is planning for future expansion. The company estimates that it will need $50,000 to purchase a new commercial oven 5 years from now. Assuming a 7% annual interest rate compounded annually, use the PV function in Excel or a financial calculator to determine how much Stella's must invest today to have $50,000 5 years from now.

Exercises

(Unless instructed otherwise, round answers to the nearest dollar. Interest rates are per annum unless otherwise indicated.)

E5.1 (LO 1) (Using Interest Tables) For each of the following cases, indicate (a) to what rate columns, and (b) to what number of periods you would refer in looking up the interest factor.

1. In a future value of 1 table:

	Annual Rate	Number of Years Invested	Compounded
a.	9%	9	Annually
b.	12	5	Quarterly
c.	10	15	Semiannually

2. In a present value of an annuity of 1 table:

	Annual Rate	Number of Years Involved	Number of Rents Involved	Frequency of Rents
a.	9%	25	25	Annually
b.	10	15	30	Semiannually
c.	12	7	28	Quarterly

E5.2 (LO 1, 2) Excel **(Simple and Compound Interest Computations)** Alan Jackson invests $20,000 at 8% annual interest, leaving the money invested without withdrawing any of the interest for 8 years. At the end of the 8 years, Alan withdraws the accumulated amount of money.

Instructions

a. Compute the amount Alan would withdraw assuming the investment earns simple interest.

b. Compute the amount Alan would withdraw assuming the investment earns interest compounded annually.

c. Compute the amount Alan would withdraw assuming the investment earns interest compounded semiannually.

E5.3 (LO 2, 3, 4) Excel (Computation of Future Values and Present Values) Using the appropriate interest table, answer each of the following questions. (Each case is independent of the others.)

a. What is the future value of $7,000 at the end of 5 periods at 8% compounded interest?

b. What is the present value of $7,000 due 8 periods hence, discounted at 6%?

c. What is the future value of 15 periodic payments of $7,000 each made at the end of each period and compounded at 10%?

d. What is the present value of $7,000 to be received at the end of each of 20 periods, discounted at 5% compound interest?

E5.4 (LO 3, 4) (Computation of Future Values and Present Values) Using the appropriate interest table, answer the following questions. (Each case is independent of the others.)

a. What is the future value of 20 periodic payments of $4,000 each made at the beginning of each period and compounded at 8%?

b. What is the present value of $2,500 to be received at the beginning of each of 30 periods, discounted at 5% compound interest?

c. What is the future value of 15 deposits of $2,000 each made at the beginning of each period and compounded at 10%? (Future value as of the end of the fifteenth period.)

d. What is the present value of six receipts of $1,000 each received at the beginning of each period, discounted at 9% compounded interest?

E5.5 (LO 4) (Computation of Present Value) Using the appropriate interest table, compute the present values of the following periodic amounts due at the end of the designated periods.

a. $30,000 receivable at the end of each period for 8 periods compounded at 12%.

b. $30,000 payments to be made at the end of each period for 16 periods at 9%.

c. $30,000 payable at the end of the seventh, eighth, ninth, and tenth periods at 12%.

E5.6 (LO 2, 3, 4) (Future Value and Present Value Problems) Presented below are three unrelated situations.

a. Dwayne Wade Company recently signed a lease for a new office building, for a lease period of 10 years. Under the lease agreement, a security deposit of $12,000 is made, with the deposit to be returned at the expiration of the lease, with interest compounded at 5% per year. What amount will the company receive at the time the lease expires?

b. Serena Williams Corporation, having recently issued a $20 million, 15-year bond issue, is committed to make annual sinking fund deposits of $600,000. The deposits are made on the last day of each year and yield a return of 10%. Will the fund at the end of 15 years be sufficient to retire the bonds? If not, what will the deficiency be?

c. Under the terms of his salary agreement, president Rex Walters has an option of receiving either an immediate bonus of $55,000, or a deferred bonus of $70,000 payable in 10 years. Ignoring tax considerations and assuming a relevant interest rate of 4%, which form of settlement should Walters accept?

E5.7 (LO 5) (Computation of Bond Prices) What would you pay for a $100,000 debenture bond that matures in 15 years and pays $5,000 a year in interest if you wanted to earn a yield of:

a. 4%? **b.** 5%? **c.** 6%?

E5.8 (LO 5) (Computations for a Retirement Fund) Clarence Weatherspoon, a super salesman contemplating retirement on his fifty-fifth birthday, decides to create a fund on an 8% basis that will enable him to withdraw $20,000 per year on June 30, beginning in 2029 and continuing through 2032. To develop this fund, Clarence intends to make equal contributions on June 30 of each of the years 2025–2028.

Instructions

a. How much must the balance of the fund equal on June 30, 2028, in order for Clarence to satisfy his objective?

b. What are each of Clarence's contributions to the fund?

E5.9 (LO 2) (Unknown Rate) LEW Company purchased a machine at a price of $100,000 by signing a note payable, which requires a single payment of $123,210 in 2 years. Assuming annual compounding of interest, what rate of interest is being paid on the loan?

E5.10 (LO 2) (Unknown Periods and Unknown Interest Rate) Consider the following independent situations.

a. Mike Finley wishes to become a millionaire. His money market fund has a balance of $92,296 and has a guaranteed interest rate of 10%. How many years must Mike leave that balance in the fund in order to get his desired $1,000,000?

b. Assume that Sally Williams desires to accumulate $1 million in 15 years using her money market fund balance of $182,696. At what interest rate must Sally's investment compound annually?

E5.11 (LO 4) (Evaluation of Purchase Options) Rizzo Excavating Inc. is purchasing a bulldozer. The equipment has a price of $100,000. The manufacturer has offered a payment plan that would allow Rizzo to make 10 equal annual payments of $16,274.53, with the first payment due one year after the purchase.

Instructions

a. How much total interest will Rizzo pay on this payment plan?

b. Rizzo could borrow $100,000 from its bank to finance the purchase at an annual rate of 9%. Should Rizzo borrow from the bank or use the manufacturer's payment plan to pay for the equipment?

E5.12 (LO 4) (Analysis of Alternatives) The Black Knights Inc., a manufacturer of low-sugar, low-sodium, low-cholesterol TV dinners, would like to increase its market share in the Sunbelt. In order to do so, Black Knights has decided to locate a new factory in the Panama City area. Black Knights will either buy or lease a site depending upon which is more advantageous. The site location committee has narrowed down the available sites to the following three very similar buildings that will meet their needs.

Building A: Purchase for a cash price of $600,000, useful life 25 years.

Building B: Lease for 25 years with annual lease payments of $69,000 being made at the beginning of the year.

Building C: Purchase for $650,000 cash. This building is larger than needed; however, the excess space can be sublet for 25 years at a net annual rental of $7,000. Rental payments will be received at the end of each year. The Black Knights Inc. has no aversion to being a landlord.

Instructions

In which building would you recommend that The Black Knights Inc. locate, assuming a 12% cost of funds?

E5.13 (LO 5) (Computation of Bond Liability) Hincapie Inc. manufactures cycling equipment. Recently, the vice president of operations of the company has requested construction of a new plant to meet the increasing demand for the company's bikes. After a careful evaluation of the request, the board of directors has decided to raise funds for the new plant by issuing $2,000,000 of 11% term corporate bonds on March 1, 2025, due on March 1, 2040, with interest payable each March 1 and September 1. At the time of issuance, the market interest rate for similar financial instruments is 10%.

Instructions

As the controller of the company, determine the selling price of the bonds.

E5.14 (LO 5) (Computation of Pension Liability) Nerwin, Inc. is a furniture manufacturing company with 50 employees. Recently, after a long negotiation with the local labor union, the company decided to initiate a pension plan as a part of its compensation plan. The plan will start on January 1, 2025. Each employee covered by the plan is entitled to a pension payment each year after retirement. As required by accounting standards, the controller of the company needs to report the pension obligation (liability). On the basis of a discussion with the supervisor of the Personnel Department and an actuary from an insurance company, the controller develops the following information related to the pension plan.

Average length of time to retirement	15 years
Expected life duration after retirement	10 years
Total pension payment expected each year after retirement for all employees. Payment made at the end of the year.	$700,000 per year

The interest rate to be used is 8%.

Instructions

On the basis of the information above, determine the present value of the pension obligation (liability).

E5.15 (LO 2, 3) (Investment Decision) Andrew Bogut just received a signing bonus of $1,000,000. His plan is to invest this payment in a fund that will earn 8%, compounded annually.

Instructions

a. If Bogut plans to establish the AB Foundation once the fund grows to $1,999,000, how many years until he can establish the foundation?

b. Instead of investing the entire $1,000,000, Bogut invests $300,000 today and plans to make 9 equal annual investments into the fund beginning one year from today. What amount should the payments be if Bogut plans to establish the $1,999,000 foundation at the end of 9 years?

E5.16 (LO 3) (Retirement of Debt) Ricky Fowler borrowed $70,000 on March 1, 2023. This amount plus accrued interest at 6% compounded semiannually is to be repaid March 1, 2033. To retire this debt, Ricky plans to contribute to a debt retirement fund five equal amounts starting on March 1, 2028, and for the next 4 years. The fund is expected to earn 5% per annum.

Instructions

How much must be contributed each year by Ricky Fowler to provide a fund sufficient to retire the debt on March 1, 2033?

E5.17 (LO 4) (Computation of Amount of Rentals) Your client, Albert Almora Leasing Company, is preparing a contract to lease a machine to Souvenirs Corporation for a period of 25 years. Almora has an investment cost of $365,755 in the machine, which has a useful life of 25 years and no salvage value at the end of that time. Your client is interested in earning an 11% return on its investment and has agreed to accept 25 equal rental payments at the end of each of the next 25 years.

Instructions

You are requested to provide Almora with the amount of each of the 25 rental payments that will yield an 11% return on investment.

E5.18 (LO 4) (Least Costly Payoff) Assume that **Sonic Foundry Corporation** has a contractual debt outstanding. Sonic has available two means of settlement. It can either make immediate payment of $2,600,000, or it can make annual payments of $300,000 for 15 years, each payment due on the last day of the year.

Instructions

Which method of payment do you recommend, assuming an expected effective interest rate of 8% during the future period?

E5.19 (LO 4) (Least Costly Payoff) Assuming the same facts as those in E5.18 except that the payments must begin now and be made on the first day of each of the 15 years, what payment method would you recommend?

E5.20 (LO 5) (Expected Cash Flows) For each of the following, determine the expected cash flows.

	Cash Flow Estimate	Probability Assessment
a.	$ 4,800	20%
	6,300	50
	7,500	30
b.	$ 5,400	30%
	7,200	50
	8,400	20
c.	$(1,000)	10%
	3,000	80
	5,000	10

E5.21 (LO 5) (Expected Cash Flows and Present Value) Keith Bowie is trying to determine the amount to set aside so that he will have enough money on hand in 2 years to overhaul the engine on his vintage used car. While there is some uncertainty about the cost of engine overhauls in 2 years, by conducting some research online, Keith has developed the following estimates.

Engine Overhaul Estimated Cash Outflow	Probability Assessment
$200	10%
450	30
600	50
750	10

Instructions

How much should Keith Bowie deposit today in an account earning 6%, compounded annually, so that he will have enough money on hand in 2 years to pay for the overhaul?

E5.22 (LO 5) (Fair Value Estimate) Killroy Company owns a trade name that was purchased in an acquisition of McClellan Company. The trade name has a book value of $3,500,000, but according to GAAP, it is assessed for impairment on an annual basis. To perform this impairment test, Killroy must estimate the fair value of the trade name. (You will learn more about intangible asset impairments in

Chapter 11.) It has developed the following cash flow estimates related to the trade name based on internal information. Each cash flow estimate reflects Killroy's estimate of annual cash flows over the next 8 years. The trade name is assumed to have no salvage value after the 8 years. (Assume the cash flows occur at the end of each year.)

Cash Flow Estimate	Probability Assessment
$380,000	20%
630,000	50
750,000	30

Instructions

a. What is the estimated fair value of the trade name? Killroy determines that the appropriate discount rate for this estimation is 8%.

b. Is the estimate developed for part (a) a Level 1 or Level 3 fair value estimate? Explain.

*E5.23 (LO 6) **(Computing Number of Periods)** With a goal of purchasing one of the coveted trips to space offered by **SpaceX**, you deposit $55,000 in an account today that earns 6% compounded annually. You estimate the price tag for a trip to space to be $250,000.

Instructions

Using the NPER function in Excel or a financial calculator, determine how long it will take you to accumulate enough money to purchase a ticket.

*E5.24 (LO 6) **(Solve for Interest Rate)** Your ultimate goal is to take a trip to Mars on **SpaceX**'s Starship. You estimate these trips will be available in 25 years at a price of $500,000. You have $75,000 available to deposit today.

Instructions

Using the Rate function in Excel or a financial calculator, determine the annual interest rate you must earn to make this trip a reality.

*E5.25 (LO 6) **(Solving for Present and Future Values)** Consider the following three independent scenarios.

a. To save for retirement, you invest $10,000 at the end of each year for 25 years. If your investment earns interest at an annual rate of 5%, how much will you have when you retire?

b. Lobner's Candle Company signed a 20-year lease that requires annual payments of $7,000 at the beginning of each year. Assuming an annual interest rate of 6.5%, what is the present value of the lease payments?

c. Maxwell Enterprises would like to have $1,000,000 saved up in 10 years to fund equipment and building upgrades. If Maxwell invests $180,000 today and commits to depositing $50,000 at the end of each of the next 10 years, what annual interest rate must the fund earn to reach $1,000,000?

Instructions

Using functions in Excel or a financial calculator, solve for the unknowns in each of the scenarios.

Problems

(Unless instructed otherwise, round answers to the nearest dollar. Interest rates are per annum unless otherwise indicated.)

P5.1 (LO 2, 4) Groupwork **(Various Time Value Situations)** Answer each of these unrelated questions.

a. On January 1, 2025, Fishbone Corporation sold a building that cost $250,000 and that had accumulated depreciation of $100,000 on the date of sale. Fishbone received as consideration a $240,000 non-interest-bearing note due on January 1, 2028. There was no established exchange price for the building, and the note had no ready market. The prevailing rate of interest for a note of this type on January 1, 2025, was 9%. At what amount should the gain from the sale of the building be reported?

b. On January 1, 2025, Fishbone Corporation purchased 300 of the $1,000 face value, 9%, 10-year bonds of Walters Inc. The bonds mature on January 1, 2035, and pay interest annually beginning January 1, 2026. Fishbone purchased the bonds to yield 11%. How much did Fishbone pay for the bonds?

c. Fishbone Corporation bought a new machine and agreed to pay for it in equal annual installments of $4,000 at the end of each of the next 10 years. Assuming that a prevailing interest rate of 8% applies to this contract, how much should Fishbone record as the cost of the machine?

d. Fishbone Corporation purchased a special tractor on December 31, 2025. The purchase agreement stipulated that Fishbone should pay $20,000 at the time of purchase and $5,000 at the end of each of the next 8 years. The tractor should be recorded on December 31, 2025, at what amount, assuming an appropriate interest rate of 12%?

e. Fishbone Corporation wants to withdraw $120,000 (including principal) from an investment fund at the end of each year for 9 years. What should be the required initial investment at the beginning of the first year if the fund earns 11%?

P5.2 (LO 2, 3, 4) Groupwork Excel (Various Time Value Situations) Using the appropriate interest table, provide the solution to each of the following four questions by computing the unknowns.

a. What is the amount of the payments that Ned Winslow must make at the end of each of 8 years to accumulate a fund of $90,000 by the end of the eighth year, if the fund earns 8% interest, compounded annually?

b. Robert Hitchcock is 40 years old today and he wishes to accumulate $500,000 by his sixty-fifth birthday so he can retire to his summer place on Lake Hopatcong. He wishes to accumulate this amount by making equal deposits on his fortieth through his sixty-fourth birthdays. What annual deposit must Robert make if the fund will earn 8% interest compounded annually?

c. Diane Ross has $20,000 to invest today at 9% to pay a debt of $47,347. How many years will it take her to accumulate enough to liquidate the debt?

d. Cindy Houston has a $27,600 debt that she wishes to repay 4 years from today; she has $19,553 that she intends to invest for the 4 years. What rate of interest will she need to earn annually in order to accumulate enough to pay the debt?

P5.3 (LO 2, 4) (Analysis of Alternatives) Assume that **Walmart Inc.** has decided to surface and maintain for 10 years a vacant lot next to one of its stores to serve as a parking lot for customers. Management is considering the following bids involving two different qualities of surfacing for a parking area of 12,000 square yards.

Bid A: A surface that costs $5.75 per square yard to install. This surface will have to be replaced at the end of 5 years. The annual maintenance cost on this surface is estimated at 25 cents per square yard for each year except the last year of its service. The replacement surface will be similar to the initial surface.

Bid B: A surface that costs $10.50 per square yard to install. This surface has a probable useful life of 10 years and will require annual maintenance in each year except the last year, at an estimated cost of 9 cents per square yard.

Instructions

Prepare computations showing which bid should be accepted by Walmart. You may assume that the cost of capital is 9%, that the annual maintenance expenditures are incurred at the end of each year, and that prices are not expected to change during the next 10 years.

P5.4 (LO 4) Excel (Evaluating Payment Alternatives) Howie Long has just learned he has won a $500,000 prize in the lottery. The lottery has given him two options for receiving the payments. (1) If Howie takes all the money today, the state and federal governments will deduct taxes at a rate of 46% immediately. (2) Alternatively, the lottery offers Howie a payout of 20 equal payments of $36,000 with the first payment occurring when Howie turns in the winning ticket. Howie will be taxed on each of these payments at a rate of 25%.

Instructions

Assuming Howie can earn an 8% rate of return (compounded annually) on any money invested during this period, which payout option should he choose?

P5.5 (LO 2, 4) (Analysis of Alternatives) Julia Baker died, leaving to her husband Brent an insurance policy contract that provides that the beneficiary (Brent) can choose any one of the following four options.

a. $55,000 immediate cash.

b. $4,000 every 3 months payable at the end of each quarter for 5 years.

c. $18,000 immediate cash and $1,800 every 3 months for 10 years, payable at the beginning of each 3-month period.

d. $4,000 every 3 months for 3 years and $1,500 each quarter for the following 25 quarters, all payments payable at the end of each quarter.

Instructions

If money is worth 2½% per quarter, compounded quarterly, which option would you recommend that Brent exercise?

P5.6 (LO 5) (Purchase Price of a Business) During the past year, Stacy McGill planted a new vineyard on 150 acres of land that she leases for $30,000 a year. She has asked you, as her accountant, to assist her in determining the value of her vineyard operation.

The vineyard will bear no grapes for the first 5 years (1–5). In the next 5 years (6–10), Stacy estimates that the vines will bear grapes that can be sold for $60,000 each year. For the next 20 years (11–30), she expects the harvest will provide annual revenues of $110,000. But during the last 10 years (31–40) of the vineyard's life, she estimates that revenues will decline to $80,000 per year.

During the first 5 years, the annual cost of pruning, fertilizing, and caring for the vineyard is estimated at $9,000; during the years of production, 6–40, these costs will rise to $12,000 per year. The relevant market rate of interest for the entire period is 6%. Assume that all receipts and payments are made at the end of each year.

Instructions

Dick Button has offered to buy Stacy's vineyard business by assuming the 40-year lease. On the basis of the current value of the business, what is the minimum price Stacy should accept?

P5.7 (LO 2, 3, 4) (Time Value Concepts Applied to Solve Business Problems) Answer the following questions related to Dubois Inc.

a. Dubois Inc. has $600,000 to invest. The company is trying to decide between two alternative uses of the funds. One alternative provides $80,000 at the end of each year for 12 years, and the other is to receive a single lump-sum payment of $1,900,000 at the end of the 12 years. Which alternative should Dubois select? Assume the interest rate is constant over the entire investment.

b. Dubois Inc. has completed the purchase of new Dell computers. The fair value of the equipment is $824,150. The purchase agreement specifies an immediate down payment of $200,000 and semiannual payments of $76,952 beginning at the end of 6 months for 5 years. What is the interest rate, to the nearest percent, used in discounting this purchase transaction?

c. Dubois Inc. loans money to John Kruk Corporation in the amount of $800,000. Dubois accepts an 8% note due in 7 years with interest payable semiannually. After 2 years (and receipt of interest for 2 years), Dubois needs money and therefore sells the note to Chicago National Bank, which demands interest on the note of 10% compounded semiannually. What is the amount Dubois will receive on the sale of the note?

d. Dubois Inc. wishes to accumulate $1,300,000 by December 31, 2035, to retire bonds outstanding. The company deposits $200,000 on December 31, 2025, which will earn interest at 10% compounded quarterly, to help in the retirement of this debt. In addition, the company wants to know how much should be deposited at the end of each quarter for 10 years to ensure that $1,300,000 is available at the end of 2035. (The quarterly deposits will also earn at a rate of 10%, compounded quarterly.) (Round to even dollars.)

P5.8 (LO 4) (Analysis of Alternatives) Ellison Inc., a manufacturer of steel school lockers, plans to purchase a new punch press for use in its manufacturing process. After contacting the appropriate vendors, the purchasing department received differing terms and options from each vendor. The Engineering Department has determined that each vendor's punch press is substantially identical and each has a useful life of 20 years. In addition, Engineering has estimated that required year-end maintenance costs will be $1,000 per year for the first 5 years, $2,000 per year for the next 10 years, and $3,000 per year for the last 5 years. Following is each vendor's sales package.

Vendor A: $55,000 cash at time of delivery and 10 year-end payments of $18,000 each. Vendor A offers all its customers the right to purchase at the time of sale a separate 20-year maintenance service contract, under which Vendor A will perform all year-end maintenance at a one-time initial cost of $10,000.

Vendor B: Forty semiannual payments of $9,500 each, with the first installment due upon delivery. Vendor B will perform all year-end maintenance for the next 20 years at no extra charge.

Vendor C: Full cash price of $150,000 will be due upon delivery.

Instructions

Assuming that both Vendors A and B will be able to perform the required year-end maintenance, that Ellison's cost of funds is 10%, and the machine will be purchased on January 1, from which vendor should the press be purchased?

P5.9 (LO 2, 4) (Analysis of Business Problems) James Kirk is a financial executive with McDowell Enterprises. Although James Kirk has not had any formal training in finance or accounting, he has a "good sense" for numbers and has helped the company grow from a very small company ($500,000 sales) to a large operation ($45 million in sales). With the business growing steadily, however, the company needs to make a number of difficult financial decisions in which James Kirk feels a little "over his head." He therefore has decided to hire a new employee with "numbers" expertise to help him. As a basis for determining whom to employ, he has decided to ask each prospective employee to prepare answers to questions relating to the following situations he has encountered recently. Here are the questions.

a. In 2024, McDowell Enterprises negotiated and closed a long-term lease contract for newly constructed truck terminals and freight storage facilities. The buildings were constructed on land owned by the company. On January 1, 2025, McDowell took possession of the leased property. The 20-year lease is effective for the period January 1, 2025, through December 31, 2044. Advance rental payments of $800,000 are payable to the lessor (owner of facilities) on January 1 of each of the first 10 years of the lease term. Advance payments of $400,000 are due on January 1 for each of the last 10 years of the lease term. McDowell has an option to purchase all the leased facilities for $1 on December 31, 2044. At the time the lease was negotiated, the fair value of the truck terminals and freight storage facilities was approximately $7,200,000. If the company had borrowed the money to purchase the facilities, it would have had to pay 10% interest. Should the company have purchased rather than leased the facilities?

b. Last year the company exchanged a piece of land for a non-interest-bearing note. The note is to be paid at the rate of $15,000 per year for 9 years, beginning one year from the date of disposal of the land. An appropriate rate of interest for the note was 11%. At the time the land was originally purchased, it cost $90,000. What is the fair value of the note?

c. The company has always followed the policy to take any cash discounts on goods purchased. Recently, the company purchased a large amount of raw materials at a price of $800,000 with terms 1/10, n/30 on which it took the discount. McDowell has recently estimated its cost of funds at 10%. Should McDowell continue this policy of always taking the cash discount?

P5.10 (LO 2, 4) (Analysis of Lease vs. Purchase) Dunn Inc. owns and operates a number of hardware stores in the New England region. Recently, the company has decided to locate another store in a rapidly growing area of Maryland. The company is trying to decide whether to purchase or lease the building and related facilities.

Purchase: The company can purchase the site, construct the building, and purchase all store fixtures. The cost would be $1,850,000. An immediate down payment of $400,000 is required, and the remaining $1,450,000 would be paid off over 5 years at $350,000 per year (including interest payments made at end of year). The property is expected to have a useful life of 12 years, and then it will be sold for $500,000. As the owner of the property, the company will have the following out-of-pocket expenses each period.

Property taxes (to be paid at the end of each year)	$40,000
Insurance (to be paid at the beginning of each year)	27,000
Other (primarily maintenance which occurs at the end of each year)	16,000
	$83,000

Lease: First National Bank has agreed to purchase the site, construct the building, and install the appropriate fixtures for Dunn Inc. if Dunn will lease the completed facility for 12 years. The annual costs for the lease would be $270,000. Dunn would have no responsibility related to the facility over the 12 years. The terms of the lease are that Dunn would be required to make 12 annual payments (the first payment to be made at the time the store opens and then each following year). In addition, a deposit of $100,000 is required when the store is opened. This deposit will be returned at the end of the twelfth year, assuming no unusual damage to the building structure or fixtures.

Instructions

Which of the two approaches should Dunn Inc. follow? (Currently, the cost of funds for Dunn Inc. is 10%.)

P5.11 (LO 5) (Pension Funding) You have been hired as a benefit consultant by Jean Honore, the owner of Attic Angels. She wants to establish a retirement plan for herself and her three employees. Jean has provided the following information. The retirement plan is to be based upon annual salary for the last year before retirement and is to provide 50% of Jean's last-year annual salary and 40% of the last-year annual salary for each employee. The plan will make annual payments at the beginning of each year for 20 years from the date of retirement. Jean wishes to fund the plan by making 15 annual deposits beginning January 1, 2025. Invested funds will earn 12% compounded annually. Information about plan participants as of January 1, 2025, is as follows.

Jean Honore, owner: Current annual salary of $48,000; estimated retirement date January 1, 2050.

Colin Davis, flower arranger: Current annual salary of $36,000; estimated retirement date January 1, 2055.

Anita Baker, sales clerk: Current annual salary of $18,000; estimated retirement date January 1, 2045.

Gavin Bryars, part-time bookkeeper: Current annual salary of $15,000; estimated retirement date January 1, 2040.

In the past, Jean has given herself and each employee a year-end salary increase of 4%. Jean plans to continue this policy in the future.

Instructions

a. Based upon the above information, what will be the annual retirement benefit for each plan participant? (Round to the nearest dollar.) (*Hint:* Jean will receive raises for 24 years.)

b. What amount must be on deposit at the end of 15 years to ensure that all benefits will be paid? (Round to the nearest dollar.)

c. What is the amount of each annual deposit Jean must make to the retirement plan?

P5.12 (LO 5) Ethics (Pension Funding) Craig Brokaw, newly appointed controller of STL, is considering ways to reduce his company's expenditures on annual pension costs. One way to do this is to switch STL's pension fund assets from First Security to NET Life. STL is a very well-respected computer manufacturer that recently has experienced a sharp decline in its financial performance for the first time in its 25-year history. Despite financial problems, STL still is committed to providing its employees with good pension and postretirement health benefits.

Under its present plan with First Security, STL is obligated to pay $43 million to meet the expected value of future pension benefits that are payable to employees as an annuity upon their retirement from the company. On the other hand, NET Life requires STL to pay only $35 million for identical future pension benefits. First Security is one of the oldest and most reputable insurance companies in North America. NET Life has a much weaker reputation in the insurance industry. In pondering the significant difference in annual pension costs, Brokaw asks himself, "Is this too good to be true?"

Instructions

a. Why might NET Life's pension cost requirement be $8 million less than First Security's requirement for the same future value?

b. What ethical issues should Craig Brokaw consider before switching STL's pension fund assets?

c. Who are the stakeholders that could be affected by Brokaw's decision?

P5.13 (LO 4, 5) (Expected Cash Flows and Present Value) Danny's Lawn Equipment sells high-quality lawn mowers and offers a 3-year warranty on all new lawn mowers sold. In 2025, Danny sold $300,000 of new specialty mowers for golf greens for which Danny's service department does not have the equipment to do the service. Danny has entered into an agreement with Mower Mavens to provide all warranty service on the special mowers sold in 2025. Danny wishes to measure the fair value of the agreement to determine the warranty liability for sales made in 2025. The controller for Danny's Lawn Equipment estimates the following expected warranty cash outflows associated with the mowers sold in 2025.

Year	Cash FlowEstimate	ProbabilityAssessment
2026	$2,500	20%
	4,000	60
	5,000	20
2027	$3,000	30%
	5,000	50
	6,000	20
2028	$4,000	30%
	6,000	40
	7,000	30

Instructions

Using expected cash flow and present value techniques, determine the value of the warranty liability for the 2025 sales. Use an annual discount rate of 5%. Assume all cash flows occur at the end of the year.

P5.14 (LO 4, 5) (Expected Cash Flows and Present Value) At the end of 2025, Sawyer Company is conducting an impairment test and needs to develop a fair value estimate for machinery used in its manufacturing operations. Given the nature of Sawyer's production process, the equipment is for special use. (No secondhand market values are available.) The equipment will be obsolete in 2 years, and Sawyer's accountants have developed the following cash flow information for the equipment.

Year	Net Cash FlowEstimate	ProbabilityAssessment
2026	$6,000	40%
	9,000	60
2027	$ (500)	20%
	2,000	60
	4,000	20
	Scrap Value	
2027	$ 500	50%
	900	50

Instructions

Using expected cash flow and present value techniques, determine the fair value of the machinery at the end of 2025. Use a 6% discount rate. Assume all cash flows occur at the end of the year.

P5.15 (LO 5) (Fair Value Estimate) Murphy Mining Company recently purchased a quartz mine that it intends to work for the next 10 years. According to state environmental laws, Murphy must restore the mine site to its original natural prairie state after it ceases mining operations at the site. To properly account for the mine, Murphy must estimate the fair value of this asset retirement obligation. This amount will be recorded as a liability and added to the value of the mine on Murphy's books. (You will learn more about these asset retirement obligations in Chapter 9.)

There is no active market for retirement obligations such as these, but Murphy has developed the following cash flow estimates based on its prior experience in mining-site restoration. It will take 3 years to restore the mine site when mining operations cease in 10 years. Each estimated cash outflow reflects an annual payment at the end of each year of the 3-year restoration period.

Restoration Estimated Cash Outflow	ProbabilityAssessment
$15,000	10%
22,000	30
25,000	50
30,000	10

Instructions

a. What is the estimated fair value of Murphy's asset retirement obligation? Murphy determines that the appropriate discount rate for this estimation is 5%. Round calculations to the nearest dollar.

b. Is the estimate developed for part (a) a Level 1 or Level 3 fair value estimate? Explain.

***P5.16 (LO 6) (Future Value of Single Sum and Annuity)** J&L Corporation currently grows and sells fresh produce year-round in its homemade greenhouses. As the business is growing, J&L hopes to significantly expand its number of greenhouses in 5 years. J&L has deposited $100,000 into an investment account that will earn a 6% annual rate of interest. J&L is also committed to depositing $10,000 into the same account at the end of each of the next 5 years.

Instructions

a. Using the FV function in Excel or a financial calculator, calculate how much J&L will have in its account at the end of 5 years.

b. Assume now that J&L will make the $10,000 deposits at the **beginning** of the next 5 years. Using the FV function in Excel, or a financial calculator, calculate how much J&L will have in its account at the end of year 5.

c. J&L knows it needs $500,000 in 5 years to purchase additional greenhouses. Assuming it will make annual deposits of $10,000 into an account earning 6% annual interest at the end of the next 5 years, use the PV function in Excel or a financial calculator to determine how much it must deposit today.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ5.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

a. Examining each item in P&G's balance sheet, identify those items that require present value, discounting, or interest computations in establishing the amount reported. (The accompanying notes are an additional source for this information.)

b. (1) What interest rates are disclosed by P&G as being used to compute interest and present values? (2) Why are there so many different interest rates applied to P&G's financial statement elements (assets, liabilities, revenues, and expenses)?

Financial Statement Analysis Case: Consolidated Natural Gas Company

UYJ5.2 Consolidated Natural Gas Company (CNG), with corporate headquarters in Pittsburgh, Pennsylvania, is one of the largest producers, transporters, distributors, and marketers of natural gas in North America. Periodically, the company experiences a decrease in the value of its gas- and oil-producing properties, and a special charge to income was recorded in order to reduce the carrying value of those assets.

Assume the following information. In 2024, CNG estimated the cash inflows from its oil- and gas-producing properties to be $375,000 per year. During 2025, the write-downs described above caused the estimate to be decreased to $275,000 per year. Production costs (cash outflows) associated with all these properties were estimated to be $125,000 per year in 2024, but this amount was revised to $155,000 per year in 2025.

Instructions

(Assume that all cash flows occur at the end of the year.)

a. Calculate the present value of net cash flows for 2024–2026 (3 years), using the 2024 estimates and a 10% discount factor.

b. Calculate the present value of net cash flows for 2025–2027 (3 years), using the 2025 estimates and a 10% discount factor.

c. Compare the results using the two estimates. Is information on future cash flows from oil- and gas-producing properties useful, considering that the estimates must be revised each year? Explain.

Accounting, Analysis, and Principles

UYJ5.3 Johnson Co. accepts a note receivable from a customer in exchange for some damaged inventory. The note requires the customer make semiannual installments of $50,000 each for 10 years. The first installment begins 6 months from the date the customer takes delivery of the damaged inventory. Johnson's management estimates that the fair value of the damaged inventory is $679,517.

Accounting

a. What interest rate is Johnson implicitly charging the customer? Express the rate as an annual rate but assume semiannual compounding.

b. At what dollar amount do you think Johnson should record the note receivable on the day the customer takes delivery of the damaged inventory?

Analysis

Assume the note receivable for damaged inventory makes up a significant portion of Johnson's assets. If interest rates increase, what happens to the fair value of the receivable? Briefly explain why.

Principles

The Financial Accounting Standards Board has issued an accounting standard that allows companies to report assets such as notes receivable at fair value. Discuss how fair value versus historical cost potentially involves a trade-off of one desired quality of accounting information against another.

Developing Your Professional Skills

FASB Codification References

[1] FASB ASC 820-10. [Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006).]

[2] FASB ASC 310-10. [Predecessor literature: "Accounting by Creditors for Impairment of a Loan," *FASB Statement No. 114* (Norwalk, Conn.: FASB, May 1993).]

[3] FASB ASC 840-30-30. [Predecessor literature: "Accounting for Leases," *FASB Statement No. 13* as amended and interpreted through May 1980 (Stamford, Conn.: FASB, 1980).]

[4] FASB ASC 715-30-35. [Predecessor literature: "Employers' Accounting for Pension Plans," *Statement of Financial Accounting Standards No. 87* (Stamford, Conn.: FASB, 1985).]

[5] FASB ASC 360-10-35. [Predecessor literature: "Accounting for the Impairment or Disposal of Long-Lived Assets," *Statement of Financial Accounting Standards No. 144* (Norwalk, Conn.: FASB, 2001).]

[6] FASB ASC 718-10-10. [Predecessor literature: "Accounting for Stock-Based Compensation," *Statement of Financial Accounting Standards No. 123* (Norwalk, Conn: FASB, 1995); and "Share-Based Payment," *Statement of Financial Accounting Standard No. 123(R)* (Norwalk, Conn.: FASB, 2004).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE5.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of present value?

b. Briefly describe the term "discount rate adjustment technique."

CE5.2 In addition to the list of topics identified in footnote 1 in the chapter, identify the specific Codification guidance related to the use of present value in goodwill impairment.

CE5.3 What is interest cost? Briefly describe imputation of interest.

Codification Research Case

At a recent meeting of the accounting staff in your company, the controller raised the issue of using present value techniques to conduct impairment tests for some of the company's fixed assets. Some of the more senior members of the staff admitted having little knowledge of present value concepts in this context, but they had heard about a FASB Concepts Statement that may be relevant. As the junior staff in the department, you have been asked to conduct some research of the authoritative literature on this topic and report back at the staff meeting next week.

Instructions

If your school has a subscription to the FASB Codification, log in and access the FASB Statements of Financial Accounting Concepts. When you have accessed the documents, you can use the search tool in your Internet browser to respond to the following items. (Provide paragraph citations.)

a. Identify the concept statement that addresses present value measurement in accounting.

b. What are some of the contexts in which present value concepts are applied in accounting measurement?

c. Provide definitions for the following terms:

1. Best estimate.
2. Estimated cash flow (contrasted to expected cash flow).
3. Fresh-start measurements.
4. Interest methods of allocation.

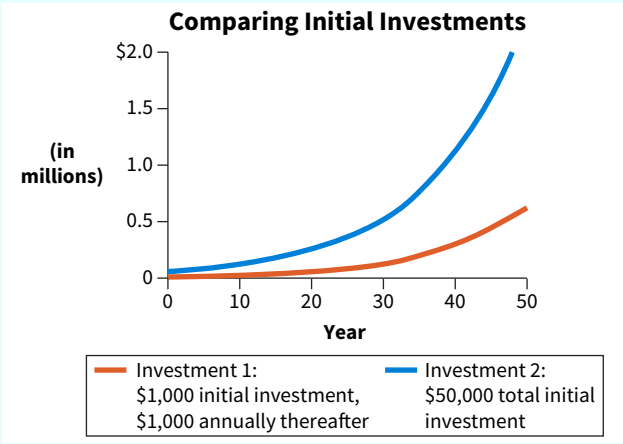
Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Maximize Your Personal Investment Strategy

DA5.1 When it comes to your personal investment strategy, using data visualizations may help you really see the impact of your choices. The adjacent graph highlights the power of compound interest over time. As you consider your personal savings plan, a visualization like this may convince you to invest that new signing bonus you received!



Required

Using the visualization, you will explain why an initial investment of $50,000 leads to a larger future value than investing $1,000 each year for the next 50 years. You will also consider why a larger initial investment may not be a viable option and what alternatives there are to grow the value of your investment.

Go to Wiley Course Resources for complete details and instructions.

DA5.2 Using visualization tools, we can see exactly how compound interest helps our investments grow.

Required

You will review a graph that shows the value of a $1,000 investment that grows at 7% over 25 years. You will answer two questions related to different components of the investment value and calculate the increase in value due to compound interest.

Go to Wiley Course Resources for complete details and instructions.

DA5.3 Can you accurately "tell the story" of an investment just by looking at a graph of the value over time?

Required

You are provided with four separate graphs. You must choose the graph that shows a $1,000 investment growing at 10% compounded annually.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Solve Time Value of Money Problems

DA5.4 Appendix 5A demonstrated how to use functions in Excel to solve the most common time value of money problems. Now it is your turn to practice.

Excel

Required

You are given several time value of money questions and asked to solve each one using a function in Excel. You will start with basic concepts and then move into more challenging scenarios, applying your time value of money knowledge to more complex questions related to real business decisions.

Go to Wiley Course Resources for complete details and instructions.

TABLE 5.1 Future Value of 1 (Future Value of a Single Sum)

$$FVF_{n,i} = (1 + i)^n$$

(*n*) Periods	2%	2½%	3%	4%	5%	6%
1	1.02000	1.02500	1.03000	1.04000	1.05000	1.06000
2	1.04040	1.05063	1.06090	1.08160	1.10250	1.12360
3	1.06121	1.07689	1.09273	1.12486	1.15763	1.19102
4	1.08243	1.10381	1.12551	1.16986	1.21551	1.26248
5	1.10408	1.13141	1.15927	1.21665	1.27628	1.33823
6	1.12616	1.15969	1.19405	1.26532	1.34010	1.41852
7	1.14869	1.18869	1.22987	1.31593	1.40710	1.50363
8	1.17166	1.21840	1.26677	1.36857	1.47746	1.59385
9	1.19509	1.24886	1.30477	1.42331	1.55133	1.68948
10	1.21899	1.28008	1.34392	1.48024	1.62889	1.79085
11	1.24337	1.31209	1.38423	1.53945	1.71034	1.89830
12	1.26824	1.34489	1.42576	1.60103	1.79586	2.01220
13	1.29361	1.37851	1.46853	1.66507	1.88565	2.13293
14	1.31948	1.41297	1.51259	1.73168	1.97993	2.26090
15	1.34587	1.44830	1.55797	1.80094	2.07893	2.39656
16	1.37279	1.48451	1.60471	1.87298	2.18287	2.54035
17	1.40024	1.52162	1.65285	1.94790	2.29202	2.69277
18	1.42825	1.55966	1.70243	2.02582	2.40662	2.85434
19	1.45681	1.59865	1.75351	2.10685	2.52695	3.02560
20	1.48595	1.63862	1.80611	2.19112	2.65330	3.20714
21	1.51567	1.67958	1.86029	2.27877	2.78596	3.39956
22	1.54598	1.72157	1.91610	2.36992	2.92526	3.60354
23	1.57690	1.76461	1.97359	2.46472	3.07152	3.81975
24	1.60844	1.80873	2.03279	2.56330	3.22510	4.04893
25	1.64061	1.85394	2.09378	2.66584	3.38635	4.29187
26	1.67342	1.90029	2.15659	2.77247	3.55567	4.54938
27	1.70689	1.94780	2.22129	2.88337	3.73346	4.82235
28	1.74102	1.99650	2.28793	2.99870	3.92013	5.11169
29	1.77584	2.04641	2.35657	3.11865	4.11614	5.41839
30	1.81136	2.09757	2.42726	3.24340	4.32194	5.74349
31	1.84759	2.15001	2.50008	3.37313	4.53804	6.08810
32	1.88454	2.20376	2.57508	3.50806	4.76494	6.45339
33	1.92223	2.25885	2.65234	3.64838	5.00319	6.84059
34	1.96068	2.31532	2.73191	3.79432	5.25335	7.25103
35	1.99989	2.37321	2.81386	3.94609	5.51602	7.68609
36	2.03989	2.43254	2.89828	4.10393	5.79182	8.14725
37	2.08069	2.49335	2.98523	4.26809	6.08141	8.63609
38	2.12230	2.55568	3.07478	4.43881	6.38548	9.15425
39	2.16474	2.61957	3.16703	4.61637	6.70475	9.70351
40	2.20804	2.68506	3.26204	4.80102	7.03999	10.28572

8%	9%	10%	11%	12%	15%	(*n*) Periods
1.08000	1.09000	1.10000	1.11000	1.12000	1.15000	1
1.16640	1.18810	1.21000	1.23210	1.25440	1.32250	2
1.25971	1.29503	1.33100	1.36763	1.40493	1.52088	3
1.36049	1.41158	1.46410	1.51807	1.57352	1.74901	4
1.46933	1.53862	1.61051	1.68506	1.76234	2.01136	5
1.58687	1.67710	1.77156	1.87041	1.97382	2.31306	6
1.71382	1.82804	1.94872	2.07616	2.21068	2.66002	7
1.85093	1.99256	2.14359	2.30454	2.47596	3.05902	8
1.99900	2.17189	2.35795	2.55803	2.77308	3.51788	9
2.15892	2.36736	2.59374	2.83942	3.10585	4.04556	10
2.33164	2.58043	2.85312	3.15176	3.47855	4.65239	11
2.51817	2.81267	3.13843	3.49845	3.89598	5.35025	12
2.71962	3.06581	3.45227	3.88328	4.36349	6.15279	13
2.93719	3.34173	3.79750	4.31044	4.88711	7.07571	14
3.17217	3.64248	4.17725	4.78459	5.47357	8.13706	15
3.42594	3.97031	4.59497	5.31089	6.13039	9.35762	16
3.70002	4.32763	5.05447	5.89509	6.86604	10.76126	17
3.99602	4.71712	5.55992	6.54355	7.68997	12.37545	18
4.31570	5.14166	6.11591	7.26334	8.61276	14.23177	19
4.66096	5.60441	6.72750	8.06231	9.64629	16.36654	20
5.03383	6.10881	7.40025	8.94917	10.80385	18.82152	21
5.43654	6.65860	8.14028	9.93357	12.10031	21.64475	22
5.87146	7.25787	8.95430	11.02627	13.55235	24.89146	23
6.34118	7.91108	9.84973	12.23916	15.17863	28.62518	24
6.84847	8.62308	10.83471	13.58546	17.00000	32.91895	25
7.39635	9.39916	11.91818	15.07986	19.04007	37.85680	26
7.98806	10.24508	13.10999	16.73865	21.32488	43.53532	27
8.62711	11.16714	14.42099	18.57990	23.88387	50.06561	28
9.31727	12.17218	15.86309	20.62369	26.74993	57.57545	29
10.06266	13.26768	17.44940	22.89230	29.95992	66.21177	30
10.86767	14.46177	19.19434	25.41045	33.55511	76.14354	31
11.73708	15.76333	21.11378	28.20560	37.58173	87.56507	32
12.67605	17.18203	23.22515	31.30821	42.09153	100.69983	33
13.69013	18.72841	25.54767	34.75212	47.14252	115.80480	34
14.78534	20.41397	28.10244	38.57485	52.79962	133.17552	35
15.96817	22.25123	30.91268	42.81808	59.13557	153.15185	36
17.24563	24.25384	34.00395	47.52807	66.23184	176.12463	37
18.62528	26.43668	37.40434	52.75616	74.17966	202.54332	38
20.11530	28.81598	41.14479	58.55934	83.08122	232.92482	39
21.72452	31.40942	45.25926	65.00087	93.05097	267.86355	40

TABLE 5.2 **Present Value of 1 (Present Value of a Single Sum)**

$$PVF_{n,i} = \frac{1}{(1+i)^n} = (1+i)^{-n}$$

(*n*) Periods	2%	2½%	3%	4%	5%	6%
1	.98039	.97561	.97087	.96154	.95238	.94340
2	.96117	.95181	.94260	.92456	.90703	.89000
3	.94232	.92860	.91514	.88900	.86384	.83962
4	.92385	.90595	.88849	.85480	.82270	.79209
5	.90573	.88385	.86261	.82193	.78353	.74726
6	.88797	.86230	.83748	.79031	.74622	.70496
7	.87056	.84127	.81309	.75992	.71068	.66506
8	.85349	.82075	.78941	.73069	.67684	.62741
9	.83676	.80073	.76642	.70259	.64461	.59190
10	.82035	.78120	.74409	.67556	.61391	.55839
11	.80426	.76214	.72242	.64958	.58468	.52679
12	.78849	.74356	.70138	.62460	.55684	.49697
13	.77303	.72542	.68095	.60057	.53032	.46884
14	.75788	.70773	.66112	.57748	.50507	.44230
15	.74301	.69047	.64186	.55526	.48102	.41727
16	.72845	.67362	.62317	.53391	.45811	.39365
17	.71416	.65720	.60502	.51337	.43630	.37136
18	.70016	.64117	.58739	.49363	.41552	.35034
19	.68643	.62553	.57029	.47464	.39573	.33051
20	.67297	.61027	.55368	.45639	.37689	.31180
21	.65978	.59539	.53755	.43883	.35894	.29416
22	.64684	.58086	.52189	.42196	.34185	.27751
23	.63416	.56670	.50669	.40573	.32557	.26180
24	.62172	.55288	.49193	.39012	.31007	.24698
25	.60953	.53939	.47761	.37512	.29530	.23300
26	.59758	.52623	.46369	.36069	.28124	.21981
27	.58586	.51340	.45019	.34682	.26785	.20737
28	.57437	.50088	.43708	.33348	.25509	.19563
29	.56311	.48866	.42435	.32065	.24295	.18456
30	.55207	.47674	.41199	.30832	.23138	.17411
31	.54125	.46511	.39999	.29646	.22036	.16425
32	.53063	.45377	.38834	.28506	.20987	.15496
33	.52023	.44270	.37703	.27409	.19987	.14619
34	.51003	.43191	.36604	.26355	.19035	.13791
35	.50003	.42137	.35538	.25342	.18129	.13011
36	.49022	.41109	.34503	.24367	.17266	.12274
37	.48061	.40107	.33498	.23430	.16444	.11579
38	.47119	.39128	.32523	.22529	.15661	.10924
39	.46195	.38174	.31575	.21662	.14915	.10306
40	.45289	.37243	.30656	.20829	.14205	.09722

8%	9%	10%	11%	12%	15%	(*n*) Periods
.92593	.91743	.90909	.90090	.89286	.86957	1
.85734	.84168	.82645	.81162	.79719	.75614	2
.79383	.77218	.75132	.73119	.71178	.65752	3
.73503	.70843	.68301	.65873	.63552	.57175	4
.68058	.64993	.62092	.59345	.56743	.49718	5
.63017	.59627	.56447	.53464	.50663	.43233	6
.58349	.54703	.51316	.48166	.45235	.37594	7
.54027	.50187	.46651	.43393	.40388	.32690	8
.50025	.46043	.42410	.39092	.36061	.28426	9
.46319	.42241	.38554	.35218	.32197	.24719	10
.42888	.38753	.35049	.31728	.28748	.21494	11
.39711	.35554	.31863	.28584	.25668	.18691	12
.36770	.32618	.28966	.25751	.22917	.16253	13
.34046	.29925	.26333	.23199	.20462	.14133	14
.31524	.27454	.23939	.20900	.18270	.12289	15
.29189	.25187	.21763	.18829	.16312	.10687	16
.27027	.23107	.19785	.16963	.14564	.09293	17
.25025	.21199	.17986	.15282	.13004	.08081	18
.23171	.19449	.16351	.13768	.11611	.07027	19
.21455	.17843	.14864	.12403	.10367	.06110	20
.19866	.16370	.13513	.11174	.09256	.05313	21
.18394	.15018	.12285	.10067	.08264	.04620	22
.17032	.13778	.11168	.09069	.07379	.04017	23
.15770	.12641	.10153	.08170	.06588	.03493	24
.14602	.11597	.09230	.07361	.05882	.03038	25
.13520	.10639	.08391	.06631	.05252	.02642	26
.12519	.09761	.07628	.05974	.04689	.02297	27
.11591	.08955	.06934	.05382	.04187	.01997	28
.10733	.08216	.06304	.04849	.03738	.01737	29
.09938	.07537	.05731	.04368	.03338	.01510	30
.09202	.06915	.05210	.03935	.02980	.01313	31
.08520	.06344	.04736	.03545	.02661	.01142	32
.07889	.05820	.04306	.03194	.02376	.00993	33
.07305	.05340	.03914	.02878	.02121	.00864	34
.06763	.04899	.03558	.02592	.01894	.00751	35
.06262	.04494	.03235	.02335	.01691	.00653	36
.05799	.04123	.02941	.02104	.01510	.00568	37
.05369	.03783	.02674	.01896	.01348	.00494	38
.04971	.03470	.02430	.01708	.01204	.00429	39
.04603	.03184	.02210	.01538	.01075	.00373	40

TABLE 5.3 Future Value of an Ordinary Annuity of 1

$$FVF\text{-}OA_{n,i} = \frac{(1+i)^n - 1}{i}$$

(*n*) Periods	2%	2½%	3%	4%	5%	6%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	2.02000	2.02500	2.03000	2.04000	2.05000	2.06000
3	3.06040	3.07563	3.09090	3.12160	3.15250	3.18360
4	4.12161	4.15252	4.18363	4.24646	4.31013	4.37462
5	5.20404	5.25633	5.30914	5.41632	5.52563	5.63709
6	6.30812	6.38774	6.46841	6.63298	6.80191	6.97532
7	7.43428	7.54743	7.66246	7.89829	8.14201	8.39384
8	8.58297	8.73612	8.89234	9.21423	9.54911	9.89747
9	9.75463	9.95452	10.15911	10.58280	11.02656	11.49132
10	10.94972	11.20338	11.46338	12.00611	12.57789	13.18079
11	12.16872	12.48347	12.80780	13.48635	14.20679	14.97164
12	13.41209	13.79555	14.19203	15.02581	15.91713	16.86994
13	14.68033	15.14044	15.61779	16.62684	17.71298	18.88214
14	15.97394	16.51895	17.08632	18.29191	19.59863	21.01507
15	17.29342	17.93193	18.59891	20.02359	21.57856	23.27597
16	18.63929	19.38022	20.15688	21.82453	23.65749	25.67253
17	20.01207	20.86473	21.76159	23.69751	25.84037	28.21288
18	21.41231	22.38635	23.41444	25.64541	28.13238	30.90565
19	22.84056	23.94601	25.11687	27.67123	30.53900	33.75999
20	24.29737	25.54466	26.87037	29.77808	33.06595	36.78559
21	25.78332	27.18327	28.67649	31.96920	35.71925	39.99273
22	27.29898	28.86286	30.53678	34.24797	38.50521	43.39229
23	28.84496	30.58443	32.45288	36.61789	41.43048	46.99583
24	30.42186	32.34904	34.42647	39.08260	44.50200	50.81558
25	32.03030	34.15776	36.45926	41.64591	47.72710	54.86451
26	33.67091	36.01171	38.55304	44.31174	51.11345	59.15638
27	35.34432	37.91200	40.70963	47.08421	54.66913	63.70577
28	37.05121	39.85980	42.93092	49.96758	58.40258	68.52811
29	38.79223	41.85630	45.21885	52.96629	62.32271	73.63980
30	40.56808	43.90270	47.57542	56.08494	66.43885	79.05819
31	42.37944	46.00027	50.00268	59.32834	70.76079	84.80168
32	44.22703	48.15028	52.50276	62.70147	75.29883	90.88978
33	46.11157	50.35403	55.07784	66.20953	80.06377	97.34316
34	48.03380	52.61289	57.73018	69.85791	85.06696	104.18376
35	49.99448	54.92821	60.46208	73.65222	90.32031	111.43478
36	51.99437	57.30141	63.27594	77.59831	95.83632	119.12087
37	54.03425	59.73395	66.17422	81.70225	101.62814	127.26812
38	56.11494	62.22730	69.15945	85.97034	107.70955	135.90421
39	58.23724	64.78298	72.23423	90.40915	114.09502	145.05846
40	60.40198	67.40255	75.40126	95.02552	120.79977	154.76197

8%	9%	10%	11%	12%	15%	(n) Periods
1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1
2.08000	2.09000	2.10000	2.11000	2.12000	2.15000	2
3.24640	3.27810	3.31000	3.34210	3.37440	3.47250	3
4.50611	4.57313	4.64100	4.70973	4.77933	4.99338	4
5.86660	5.98471	6.10510	6.22780	6.35285	6.74238	5
7.33592	7.52334	7.71561	7.91286	8.11519	8.75374	6
8.92280	9.20044	9.48717	9.78327	10.08901	11.06680	7
10.63663	11.02847	11.43589	11.85943	12.29969	13.72682	8
12.48756	13.02104	13.57948	14.16397	14.77566	16.78584	9
14.48656	15.19293	15.93743	16.72201	17.54874	20.30372	10
16.64549	17.56029	18.53117	19.56143	20.65458	24.34928	11
18.97713	20.14072	21.38428	22.71319	24.13313	29.00167	12
21.49530	22.95339	24.52271	26.21164	28.02911	34.35192	13
24.21492	26.01919	27.97498	30.09492	32.39260	40.50471	14
27.15211	29.36092	31.77248	34.40536	37.27972	47.58041	15
30.32428	33.00340	35.94973	39.18995	42.75328	55.71747	16
33.75023	36.97371	40.54470	44.50084	48.88367	65.07509	17
37.45024	41.30134	45.59917	50.39593	55.74972	75.83636	18
41.44626	46.01846	51.15909	56.93949	63.43968	88.21181	19
45.76196	51.16012	57.27500	64.20283	72.05244	102.44358	20
50.42292	56.76453	64.00250	72.26514	81.69874	118.81012	21
55.45676	62.87334	71.40275	81.21431	92.50258	137.63164	22
60.89330	69.53194	79.54302	91.14788	104.60289	159.27638	23
66.76476	76.78981	88.49733	102.17415	118.15524	184.16784	24
73.10594	84.70090	98.34706	114.41331	133.33387	212.79302	25
79.95442	93.32398	109.18177	127.99877	150.33393	245.71197	26
87.35077	102.72314	121.09994	143.07864	169.37401	283.56877	27
95.33883	112.96822	134.20994	159.81729	190.69889	327.10408	28
103.96594	124.13536	148.63093	178.39719	214.58275	377.16969	29
113.28321	136.30754	164.49402	199.02088	241.33268	434.74515	30
123.34587	149.57522	181.94343	221.91317	271.29261	500.95692	31
134.21354	164.03699	201.13777	247.32362	304.84772	577.10046	32
145.95062	179.80032	222.25154	275.52922	342.42945	644.66553	33
158.62667	196.98234	245.47670	306.83744	384.52098	765.36535	34
172.31680	215.71076	271.02437	341.58955	431.66350	881.17016	35
187.10215	236.12472	299.12681	380.16441	484.46312	1014.34568	36
203.07032	258.37595	330.03949	422.98249	543.59869	1167.49753	37
220.31595	282.62978	364.04343	470.51056	609.83053	1343.62216	38
238.94122	309.06646	401.44778	523.26673	684.01020	1546.16549	39
259.05652	337.88245	442.59256	581.82607	767.09142	1779.09031	40

TABLE 5.4 **Present Value of an Ordinary Annuity of 1**

$$PVF\text{-}OA_{n,i} = \frac{1 - \frac{1}{(1+i)^n}}{i}$$

(*n*) Periods	2%	2½%	3%	4%	5%	6%
1	.98039	.97561	.97087	.96154	.95238	.94340
2	1.94156	1.92742	1.91347	1.88609	1.85941	1.83339
3	2.88388	2.85602	2.82861	2.77509	2.72325	2.67301
4	3.80773	3.76197	3.71710	3.62990	3.54595	3.46511
5	4.71346	4.64583	4.57971	4.45182	4.32948	4.21236
6	5.60143	5.50813	5.41719	5.24214	5.07569	4.91732
7	6.47199	6.34939	6.23028	6.00205	5.78637	5.58238
8	7.32548	7.17014	7.01969	6.73274	6.46321	6.20979
9	8.16224	7.97087	7.78611	7.43533	7.10782	6.80169
10	8.98259	8.75206	8.53020	8.11090	7.72173	7.36009
11	9.78685	9.51421	9.25262	8.76048	8.30641	7.88687
12	10.57534	10.25776	9.95400	9.38507	8.86325	8.38384
13	11.34837	10.98319	10.63496	9.98565	9.39357	8.85268
14	12.10625	11.69091	11.29607	10.56312	9.89864	9.29498
15	12.84926	12.38138	11.93794	11.11839	10.37966	9.71225
16	13.57771	13.05500	12.56110	11.65230	10.83777	10.10590
17	14.29187	13.71220	13.16612	12.16567	11.27407	10.47726
18	14.99203	14.35336	13.75351	12.65930	11.68959	10.82760
19	15.67846	14.97889	14.32380	13.13394	12.08532	11.15812
20	16.35143	15.58916	14.87747	13.59033	12.46221	11.46992
21	17.01121	16.18455	15.41502	14.02916	12.82115	11.76408
22	17.65805	16.76541	15.93692	14.45112	13.16300	12.04158
23	18.29220	17.33211	16.44361	14.85684	13.48857	12.30338
24	18.91393	17.88499	16.93554	15.24696	13.79864	12.55036
25	19.52346	18.42438	17.41315	15.62208	14.09394	12.78336
26	20.12104	18.95061	17.87684	15.98277	14.37519	13.00317
27	20.70690	19.46401	18.32703	16.32959	14.64303	13.21053
28	21.28127	19.96489	18.76411	16.66306	14.89813	13.40616
29	21.84438	20.45355	19.18845	16.98371	15.14107	13.59072
30	22.39646	20.93029	19.60044	17.29203	15.37245	13.76483
31	22.93770	21.39541	20.00043	17.58849	15.59281	13.92909
32	23.46833	21.84918	20.38877	17.87355	15.80268	14.08404
33	23.98856	22.29188	20.76579	18.14765	16.00255	14.23023
34	24.49859	22.72379	21.13184	18.41120	16.19290	14.36814
35	24.99862	23.14516	21.48722	18.66461	16.37419	14.49825
36	25.48884	23.55625	21.83225	18.90828	16.54685	14.62099
37	25.96945	23.95732	22.16724	19.14258	16.71129	14.73678
38	26.44064	24.34860	22.49246	19.36786	16.86789	14.84602
39	26.90259	24.73034	22.80822	19.58448	17.01704	14.94907
40	27.35548	25.10278	23.11477	19.79277	17.15909	15.04630

8%	9%	10%	11%	12%	15%	(*n*) Periods
.92593	.91743	.90909	.90090	.89286	.86957	1
1.78326	1.75911	1.73554	1.71252	1.69005	1.62571	2
2.57710	2.53130	2.48685	2.44371	2.40183	2.28323	3
3.31213	3.23972	3.16986	3.10245	3.03735	2.85498	4
3.99271	3.88965	3.79079	3.69590	3.60478	3.35216	5
4.62288	4.48592	4.35526	4.23054	4.11141	3.78448	6
5.20637	5.03295	4.86842	4.71220	4.56376	4.16042	7
5.74664	5.53482	5.33493	5.14612	4.96764	4.48732	8
6.24689	5.99525	5.75902	5.53705	5.32825	4.77158	9
6.71008	6.41766	6.14457	5.88923	5.65022	5.01877	10
7.13896	6.80519	6.49506	6.20652	5.93770	5.23371	11
7.53608	7.16073	6.81369	6.49236	6.19437	5.42062	12
7.90378	7.48690	7.10336	6.74987	6.42355	5.58315	13
8.24424	7.78615	7.36669	6.98187	6.62817	5.72448	14
8.55948	8.06069	7.60608	7.19087	6.81086	5.84737	15
8.85137	8.31256	7.82371	7.37916	6.97399	5.95424	16
9.12164	8.54363	8.02155	7.54879	7.11963	6.04716	17
9.37189	8.75563	8.20141	7.70162	7.24967	6.12797	18
9.60360	8.95012	8.36492	7.83929	7.36578	6.19823	19
9.81815	9.12855	8.51356	7.96333	7.46944	6.25933	20
10.01680	9.29224	8.64869	8.07507	7.56200	6.31246	21
10.20074	9.44243	8.77154	8.17574	7.64465	6.35866	22
10.37106	9.58021	8.88322	8.26643	7.71843	6.39884	23
10.52876	9.70661	8.98474	8.34814	7.78432	6.43377	24
10.67478	9.82258	9.07704	8.42174	7.84314	6.46415	25
10.80998	9.92897	9.16095	8.48806	7.89566	6.49056	26
10.93516	10.02658	9.23722	8.54780	7.94255	6.51353	27
11.05108	10.11613	9.30657	8.60162	7.98442	6.53351	28
11.15841	10.19828	9.36961	8.65011	8.02181	6.55088	29
11.25778	10.27365	9.42691	8.69379	8.05518	6.56598	30
11.34980	10.34280	9.47901	8.73315	8.08499	6.57911	31
11.43500	10.40624	9.52638	8.76860	8.11159	6.59053	32
11.51389	10.46444	9.56943	8.80054	8.13535	6.60046	33
11.58693	10.51784	9.60858	8.82932	8.15656	6.60910	34
11.65457	10.56682	9.64416	8.85524	8.17550	6.61661	35
11.71719	10.61176	9.67651	8.87859	8.19241	6.62314	36
11.77518	10.65299	9.70592	8.89963	8.20751	6.62882	37
11.82887	10.69082	9.73265	8.91859	8.22099	6.63375	38
11.87858	10.72552	9.75697	8.93567	8.23303	6.63805	39
11.92461	10.75736	9.77905	8.95105	8.24378	6.64178	40

TABLE 5.5 **Present Value of an Annuity Due of 1**

$$PVF\text{-}AD_{n,i} = 1 + \frac{1 - \frac{1}{(1+i)^{n-1}}}{i}$$

(*n*) Periods	2%	2½%	3%	4%	5%	6%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	1.98039	1.97561	1.97087	1.96154	1.95238	1.94340
3	2.94156	2.92742	2.91347	2.88609	2.85941	2.83339
4	3.88388	3.85602	3.82861	3.77509	3.72325	3.67301
5	4.80773	4.76197	4.71710	4.62990	4.54595	4.46511
6	5.71346	5.64583	5.57971	5.45182	5.32948	5.21236
7	6.60143	6.50813	6.41719	6.24214	6.07569	5.91732
8	7.47199	7.34939	7.23028	7.00205	6.78637	6.58238
9	8.32548	8.17014	8.01969	7.73274	7.46321	7.20979
10	9.16224	8.97087	8.78611	8.43533	8.10782	7.80169
11	9.98259	9.75206	9.53020	9.11090	8.72173	8.36009
12	10.78685	10.51421	10.25262	9.76048	9.30641	8.88687
13	11.57534	11.25776	10.95400	10.38507	9.86325	9.38384
14	12.34837	11.98319	11.63496	10.98565	10.39357	9.85268
15	13.10625	12.69091	12.29607	11.56312	10.89864	10.29498
16	13.84926	13.38138	12.93794	12.11839	11.37966	10.71225
17	14.57771	14.05500	13.56110	12.65230	11.83777	11.10590
18	15.29187	14.71220	14.16612	13.16567	12.27407	11.47726
19	15.99203	15.35336	14.75351	13.65930	12.68959	11.82760
20	16.67846	15.97889	15.32380	14.13394	13.08532	12.15812
21	17.35143	16.58916	15.87747	14.59033	13.46221	12.46992
22	18.01121	17.18455	16.41502	15.02916	13.82115	12.76408
23	18.65805	17.76541	16.93692	15.45112	14.16300	13.04158
24	19.29220	18.33211	17.44361	15.85684	14.48857	13.30338
25	19.91393	18.88499	17.93554	16.24696	14.79864	13.55036
26	20.52346	19.42438	18.41315	16.62208	15.09394	13.78336
27	21.12104	19.95061	18.87684	16.98277	15.37519	14.00317
28	21.70690	20.46401	19.32703	17.32959	15.64303	14.21053
29	22.28127	20.96489	19.76411	17.66306	15.89813	14.40616
30	22.84438	21.45355	20.18845	17.98371	16.14107	14.59072
31	23.39646	21.93029	20.60044	18.29203	16.37245	14.76483
32	23.93770	22.39541	21.00043	18.58849	16.59281	14.92909
33	24.46833	22.84918	21.38877	18.87355	16.80268	15.08404
34	24.98856	23.29188	21.76579	19.14765	17.00255	15.23023
35	25.49859	23.72379	22.13184	19.41120	17.19290	15.36814
36	25.99862	24.14516	22.48722	19.66461	17.37419	15.49825
37	26.48884	24.55625	22.83225	19.90828	17.54685	15.62099
38	26.96945	24.95732	23.16724	20.14258	17.71129	15.73678
39	27.44064	25.34860	23.49246	20.36786	17.86789	15.84602
40	27.90259	25.73034	23.80822	20.58448	18.01704	15.94907

8%	9%	10%	11%	12%	15%	(*n*) Periods
1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1
1.92593	1.91743	1.90909	1.90090	1.89286	1.86957	2
2.78326	2.75911	2.73554	2.71252	2.69005	2.62571	3
3.57710	3.53130	3.48685	3.44371	3.40183	3.28323	4
4.31213	4.23972	4.16986	4.10245	4.03735	3.85498	5
4.99271	4.88965	4.79079	4.69590	4.60478	4.35216	6
5.62288	5.48592	5.35526	5.23054	5.11141	4.78448	7
6.20637	6.03295	5.86842	5.71220	5.56376	5.16042	8
6.74664	6.53482	6.33493	6.14612	5.96764	5.48732	9
7.24689	6.99525	6.75902	6.53705	6.32825	5.77158	10
7.71008	7.41766	7.14457	6.88923	6.65022	6.01877	11
8.13896	7.80519	7.49506	7.20652	6.93770	6.23371	12
8.53608	8.16073	7.81369	7.49236	7.19437	6.42062	13
8.90378	8.48690	8.10336	7.74987	7.42355	6.58315	14
9.24424	8.78615	8.36669	7.98187	7.62817	6.72448	15
9.55948	9.06069	8.60608	8.19087	7.81086	6.84737	16
9.85137	9.31256	8.82371	8.37916	7.97399	6.95424	17
10.12164	9.54363	9.02155	8.54879	8.11963	7.04716	18
10.37189	9.75563	9.20141	8.70162	8.24967	7.12797	19
10.60360	9.95012	9.36492	8.83929	8.36578	7.19823	20
10.81815	10.12855	9.51356	8.96333	8.46944	7.25933	21
11.01680	10.29224	9.64869	9.07507	8.56200	7.31246	22
11.20074	10.44243	9.77154	9.17574	8.64465	7.35866	23
11.37106	10.58021	9.88322	9.26643	8.71843	7.39884	24
11.52876	10.70661	9.98474	9.34814	8.78432	7.43377	25
11.67478	10.82258	10.07704	9.42174	8.84314	7.46415	26
11.80998	10.92897	10.16095	9.48806	8.89566	7.49056	27
11.93518	11.02658	10.23722	9.54780	8.94255	7.51353	28
12.05108	11.11613	10.30657	9.60162	8.98442	7.53351	29
12.15841	11.19828	10.36961	9.65011	9.02181	7.55088	30
12.25778	11.27365	10.42691	9.69379	9.05518	7.56598	31
12.34980	11.34280	10.47901	9.73315	9.08499	7.57911	32
12.43500	11.40624	10.52638	9.76860	9.11159	7.59053	33
12.51389	11.46444	10.56943	9.80054	9.13535	7.60046	34
12.58693	11.51784	10.60858	9.82932	9.15656	7.60910	35
12.65457	11.56682	10.64416	9.85524	9.17550	7.61661	36
12.71719	11.61176	10.67651	9.87859	9.19241	7.62314	37
12.77518	11.65299	10.70592	9.89963	9.20751	7.62882	38
12.82887	11.69082	10.73265	9.91859	9.22099	7.63375	39
12.87858	11.72552	10.75697	9.93567	9.23303	7.63805	40

CHAPTER 6

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Cash and Receivables

WHAT are cash and receivables?

Cash consists of coin, currency, available funds on deposit at the bank, as well as negotiable instruments such as money orders, certified checks, and personal checks. In addition, financial instruments that can be readily converted to cash (cash equivalents) are also viewed as cash. Receivables (often referred to as **loans and receivables**) are claims held against customers and others for money, goods, or services. An example of a loan is a bank like **BMO** lending money to **Harley-Davidson**. An example of a receivable is a company like **Best Buy** recording an accounts receivable when it sells a flat-screen TV on account.

Overseas Cash as a Percentage of Market Cap

	Cash Parked Overseas	
	Amount (in millions)	As a % of Market Cap
NetApp	$ 4,300	36%
Cisco Systems	47,400	31
Hewlett-Packard	15,133	24
General Electric	61,100	23
Amgen	25,700	21
Microsoft	77,100	11

WHY is accounting information on cash and receivables important?

A company's liquidity and financial flexibility is defined by how quickly other assets can be converted to cash, thereby being available to meet obligations as they come due. Many companies also rely on accounts receivable from customers in order to facilitate sales. As a result, investors and creditors closely monitor information reported in the financial statements to determine whether a company is holding too much cash, such that it is missing out on good investment opportunities, or if it is collecting receivables on a timely basis.

A good case study on the importance of information on cash and the availability of cash to companies is the issue of "trapped cash." For example, **Apple** recently indicated what it is planning to do with its large cash balance of $98 billion. However, what it was really talking about is the $34 billion the company has here in the United States. The other $64 billion is sitting in foreign bank accounts, held to be reinvested in factories and acquisitions overseas. These trapped cash balances are quite significant for a number of companies, as the table above indicates.

HOW do companies account for and report information on cash and receivables?

To be reported as "cash," an asset must be readily available for the payment of current obligations and free from contractual restrictions that limit its use in satisfying debts. Companies report cash as a current asset in the balance sheet. Companies value and report receivables at the net amount expected to be collected. Determining the net amount expected to be collected requires estimating uncollectible receivables. Companies report receivables with appropriate offset of valuation accounts against receivables, and classify receivables in the balance sheet as current or noncurrent.

Sources: D. Zion, R. Gomatam, and R. Graziano, "Parking A-Lot Overseas: At Least $600 Billion in Cash and Over $2 Trillion in Earnings," *Credit Suisse Equity Research* (March 17, 2015); and B. Kochkodin, "Apple Leaves Overseas Cash Out of Its Latest Quarterly Report," *www.bloomberg.com* (May 11, 2018).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 6.1 Indicate how to report cash and related items.	**6.1 Cash** • Reporting cash • Summary of cash-related items	Examples **6.1** Compensating Balance **6.2** Bank Overdraft Put It into Practice LO 6.1 Classify Cash
LO 6.2 Define receivables and explain accounting issues related to their recognition.	**6.2 Receivables** • Recognition of accounts receivable • Measurement • Variable consideration	Examples **6.3** Trade Discount **6.4** Cash Discounts **6.5** Discount Not Taken **6.6** Sales Returns and Allowances **6.7** Estimated Returns Put It into Practice LO 6.2 Record Credit Sales
LO 6.3 Explain accounting issues related to valuation of accounts receivable.	**6.3 Valuation of Accounts Receivable** • Direct write-off method • Allowance method	Examples **6.8** Recording Uncollectible Accounts **6.9** Write-Off of Uncollectible Account **6.10** Recovery of Uncollectible Account Put It into Practice LO 6.3 Estimate and Record Bad Debts
LO 6.4 Explain accounting issues related to recognition and valuation of notes receivable.	**6.4 Notes Receivable** • Recognition of notes receivable • Valuation of notes receivable	Examples **6.11** Note Receivable Entries **6.12** Note Received for Land Put It into Practice LO 6.4 Record Note Receivable and Interest
LO 6.5 Explain additional accounting issues related to accounts and notes receivable.	**6.5 Other Issues** • Disposition of receivables • Presentation and decision analysis	Examples **6.13** Sale without Recourse **6.14** Sale with Recourse **6.15** Loan

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available at Wiley Course Resources.

6.1 Cash

LEARNING OBJECTIVE 1

Indicate how to report cash and related items.

Cash, the most liquid of assets, is the standard medium of exchange and the basis for measuring and accounting for all other items. Companies generally classify cash as a current asset. Cash consists of:

- Coin, currency, petty cash, and available funds on deposit at the bank, such as checking and savings accounts and money market accounts with check-writing privileges.
- Negotiable instruments such as money orders, certified checks, cashier's checks, personal checks, and bank drafts.

Some negotiable instruments provide investors with an opportunity to earn interest. These items, more appropriately classified as **cash equivalents**, are short-term, highly liquid investments that are:

1. Readily convertible to known amounts of cash.
2. So near their maturity that they present insignificant risk of changes in value because of changes in interest rates.

Generally, only investments with original maturities of three months or less qualify under this definition. Examples of cash equivalents include various types of "short-term paper" such as Treasury bills, certificates of deposit, commercial paper, and money market funds. Most companies combine cash with cash equivalents on the balance sheet and describe the amount of the cash equivalents in the notes. Short-term paper investments with maturities of 3 to 12 months would be reported as short-term investments in current assets.[1]

Certain items may seem to be cash but are not. Here are a few items and how they should be classified:

- **Postdated checks.** These are checks, usually from customers, that are dated in the future. These checks cannot be deposited until that future date. Therefore, they are listed as receivables until they can be deposited.
- **I.O.U.s.** These represent amounts owed to the company, typically from employees. I.O.U.s. are classified as receivables.
- **Travel advances.** If a company advances money to employees and intends to collect it from employees in the future or deduct it from their salaries, then the amounts are recorded as receivables. If the travel advance will not be reimbursed by the employee, it is classified as a prepaid expense.
- **Postage stamps on hand.** These are included as part of office supplies inventory or as a prepaid expense.

Reporting Cash

Although the reporting of cash is relatively straightforward, two issues merit special attention: restricted cash and bank overdrafts.

Restricted Cash

Restricted cash is held by a company for a specific purpose and is therefore not available for immediate general use. Petty cash, payroll, and dividend funds are examples of cash set aside for a particular purpose.

- In most situations, these fund balances are not material. Therefore, companies do not separate them from cash in the financial statements.
- When material in amount, companies separate restricted cash from "regular" cash for reporting purposes. Companies classify restricted cash either in the current assets or in the long-term assets section, depending on the date of availability or disbursement.

[1] A variety of "short-term paper" is available for investment. For example, **certificates of deposit (CDs)** represent formal evidence of indebtedness, issued by a bank, subject to withdrawal under the specific terms of the instrument. Issued in various denominations, they have maturities anywhere from 7 days to 10 years and generally pay interest at the short-term interest rate in effect at the date of issuance.

In **money-market funds**, a variation of the mutual fund, the mix of Treasury bills and commercial paper making up the fund's portfolio determines the yield. Most money-market funds require an initial minimum investment of $1,000; many allow withdrawal by check or wire transfer.

Treasury bills are U.S. government obligations generally issued with 4-, 13-, and 26-week maturities; they are sold at weekly government auctions in denominations of $1,000 up to a maximum purchase of $5 million.

Commercial paper is a short-term note issued by corporations with good credit ratings. Often issued in $5,000 and $10,000 denominations, these notes generally yield a higher rate than Treasury bills.

Among other potential restrictions, companies need to determine whether any of the cash in accounts outside the United States is restricted by regulations against exportation of currency.

Cash classified in the long-term section is frequently set aside for plant expansion, retirement of long-term debt, or, in the case of **Apple Inc.** as shown in **Illustration 6.1**, for a contractual agreement with its bank.

Apple Inc.
(in millions)

Cash and cash equivalents	$48,844
Restricted cash included in other current assets	23
Restricted cash included in other non-current assets	1,357
Cash, cash equivalents and restricted cash	$50,224

The Company's restricted cash primarily consisted of cash required to be on deposit under a contractual agreement with a bank to support the Company's iPhone Upgrade Program.

ILLUSTRATION 6.1 Disclosure of Restricted Cash

Another type of restricted cash is a compensating balance. A **compensating balance** is a minimum balance that must be maintained in a bank account, which is used to offset the cost incurred by the bank to set up a loan.

Example 6.1 Compensating Balance

FACTS You are interested in purchasing a franchise from **Subway** and need to borrow $200,000 for one year. Your bank agrees to loan you this money, provided you pay interest at 6% on the loan. In addition, the bank requires that you keep $20,000 in the bank as a compensating balance related to your loan.

QUESTION Why do you think the bank requires a compensating balance from you?

SOLUTION

The bank requires this compensating balance for two reasons: (1) in case of collection problems, the bank has your $20,000, and (2) to cover loan-servicing costs, the bank is effectively charging you more than 6% as you are paying $12,000 (.06 × $200,000) for a loan of $180,000, which equates to an interest rate of 6.7% ($12,000 ÷ $180,000).

To avoid misleading investors about the amount of cash available to meet recurring obligations, the SEC recommends the following reporting options for **legally restricted deposits** held as compensating balances.

- Compensating balances against **short-term** borrowings should be reported in current assets as "cash and cash equivalents." **[1]** (See the FASB Codification References near the end of the chapter.)
- Compensating balances against **long-term** borrowings should be reported as noncurrent assets in either the investments or other assets sections, using a caption such as "Cash on deposit maintained as compensating balance."

In cases where compensating balance arrangements exist without agreements that restrict the use of cash amounts shown on the balance sheet, companies should describe the arrangements and the amounts involved in the notes.[2]

[2]Bank overdrafts usually occur because of a simple oversight by the company writing the check. Banks often expect companies to have overdrafts from time to time and therefore negotiate a fee as payment for this possible occurrence. However, at one time, **E.F. Hutton** (a large brokerage firm) began intentionally overdrawing its accounts by astronomical amounts—on some days exceeding $1 billion—thus obtaining interest-free loans that it could invest. Because the amounts were so large and fees were not negotiated in advance, E.F. Hutton came under criminal investigation for its actions.

Bank Overdrafts

Many individuals (not you, of course) have received a notification from their bank indicating they have overdrawn their bank account. **Bank overdrafts** occur when a company writes a check for more than the amount in its cash account. Companies should report bank overdrafts in the current liabilities section, adding them to the amount reported as accounts payable. If material, companies should disclose these items separately, either on the face of the balance sheet or in the related notes.

Bank overdrafts are generally not offset against the Cash account. A major exception is when available cash is present in another account in the same bank on which the overdraft occurred. Offsetting in this case is required.

Example 6.2
Bank Overdraft

FACTS Caliver Inc. has three bank accounts at First City Bank. Two of the bank accounts have positive balances of $300,000 and $50,000. The third account has an overdraft of $500,000.

QUESTION How should this information be reported in Caliver's balance sheet?

SOLUTION

Caliver reports an account payable (or bank overdraft liability) of $150,000 ($300,000 + $50,000 − $500,000) in the current liability section of the balance sheet. A right of offset is permitted because all the accounts are at First City. If the first two accounts are at First City but the bank overdraft is at Lincoln National Bank, then Caliver reports cash of $350,000 and accounts payable of $500,000.

Summary of Cash-Related Items

Cash and cash equivalents include the medium of exchange and most negotiable instruments. If the item cannot be quickly converted to coin or currency, a company separately classifies it as an investment, receivable, or prepaid expense. Companies separate and classify cash that is unavailable for payment of currently maturing liabilities in the long-term assets section. **Illustration 6.2** summarizes the classification of cash-related items.

ILLUSTRATION 6.2
Classification of Cash-Related Items

Item	Classification	Comment
Cash	Cash	If unrestricted, report as cash. If restricted, identify and classify as current and noncurrent assets.
Petty cash and change funds	Cash	Report as cash.
Short-term paper	Cash equivalents	Investments with maturity of less than 3 months, often combined with cash.
Short-term paper	Short-term investments	Investments with maturity of 3 to 12 months.
Postdated checks and I.O.U.s	Receivables	Assumed to be collectible.
Travel advances	Receivables	Assumed to be collected from employees or deducted from their salaries.
Postage on hand (as stamps or in postage meters)	Prepaid expenses	May also be classified as office supplies inventory.
Bank overdrafts	Current liability	If right of offset exists, reduce cash.
Compensating balances	Cash separately classified as a deposit maintained as compensating balance	Classify as current or noncurrent in the balance sheet. Disclose separately in notes details of the arrangement.

Accounting Matters — What Counts for Cash?

Do you think cryptocurrencies, such as Bitcoin, are cash? These currencies are generating a significant amount of press given their rapid increases in value and extreme volatility. Because of this volatility, the value of Bitcoin in circulation has recently fluctuated between $100 and $500 billion.

Yet, under the current U.S. accounting framework, cryptocurrency is not reported as cash, currency, or a financial asset. Some are now urging standard-setters and regulators to provide guidance by developing an accounting framework for cryptocurrency holdings, including the costs related to "mining" efforts. One perspective argues for Bitcoin and other cryptocurrencies being accounted for as an indefinite-life intangible asset. The implication of this model is that declines in the market price of cryptocurrencies should be included in earnings, while increases in value beyond the original cost or recoveries of previous declines in value would not be captured.

Companies also are being encouraged to provide transparent disclosures concerning the reporting of cryptocurrencies and the entity's risk exposure to such assets. Such disclosure can alert investors to the impact of cryptocurrency holdings on capital resources and liquidity and related risk factors, similar to other cash parking places.

For example, **Square Inc.** indicates it accounts for Bitcoin similar to an intangible asset: "Upon purchase, the Company records the cost of bitcoin within other current assets in its consolidated balance sheets. Upon sale, the Company records the total sale amount received from customers as bitcoin revenue and the associated cost as cost of revenue. . . . The Company assesses the carrying value of bitcoin held by the company at each reporting date and records an impairment charge if the carrying value exceeds the fair value." That is, like an intangible asset, Bitcoin is only adjusted downward for changes in value.

Sources: PwC, "Cryptocurrencies: Time to Consider Plan B," *PwC Point of View* (March 2018); and Square Inc. 10-K report.

Put It into Practice LO 6.1
Classify Cash

FACTS Atwood Inc. has the following items related to its balance sheet at December 31, 2025.

1. Cash and money market funds with check-cashing privileges.
2. Petty cash and payroll funds.
3. Short-term treasury bills with a maturity of less than 3 months.
4. Post-dated checks.
5. Travel advances to employees.
6. Postage on hand (as stamps on in postage meters).
7. Cash restricted for future purchase of land.
8. Bank overdrafts.
9. Compensating balances related to long-term loan balance.

INSTRUCTIONS

Determine how to classify each of these items on Atwood's balance sheet.

SOLUTION

1. Reported as cash.
2. Reported as cash.
3. Reported as cash equivalent.
4. Reported as receivables.
5. Reported as receivables if collected from employees or deducted from their salaries. Otherwise, companies classify as prepaid expense.
6. Reported as office supplies inventory or as prepaid expense.
7. Reported as noncurrent asset.
8. Reported as a current liability unless right of offset is permitted. If right of offset occurs, deduction from cash.
9. Reported as noncurrent asset, often as an investment.

6.2 Receivables

LEARNING OBJECTIVE 2

Define receivables and explain accounting issues related to their recognition.

Like cash, **receivables** are a financial asset. Receivables (often referred to as **loans and receivables**) are claims held against customers and others for money, goods, or services. An example of a loan is a financial institution like **Wells Fargo** providing funds to **Tesla**. An example of a receivable is a company like **GoPro** recording an account receivable when it sells a camera on account to one of its retailers. For purposes of discussion, we will simply use the term receivables to mean loans and receivables.

Companies classify receivables as either **current** (short-term) or **noncurrent** (long-term).

- Companies expect to collect **current receivables** within a year or during the current operating cycle, whichever is longer.
- They classify all other receivables as **noncurrent**.

Receivables are further classified in the balance sheet as either trade or nontrade receivables. Customers often owe a company amounts for goods bought or services rendered. A company may subclassify these **trade receivables** into accounts receivable and notes receivable.

- **Accounts receivable** are oral promises of the purchaser to pay for goods and services sold. They represent "open accounts" resulting from short-term extensions of credit. A company normally collects them within 30 to 60 days.
- **Notes receivable** are written promises to pay a certain sum of money on a specified future date. They may arise from sales, financing, or other transactions. Notes may be short-term or long-term and generally include an interest component.

Nontrade receivables arise from a variety of transactions outside the normal course of business. Some examples of nontrade receivables are as follows.

1. Advances to officers, employees, and subsidiaries.
2. Deposits paid to cover potential damages or losses, or as a guarantee of performance or payment.
3. Dividends and interest receivable.
4. Claims against insurance companies for casualties sustained, for tax refunds, or for damaged or lost goods.

Because of the peculiar nature of nontrade receivables, companies generally report nontrade receivables as separate items in the balance sheet.

Illustration 6.3 shows the reporting of trade and nontrade receivables in the balance sheets of **Molson Coors Brewing Company** and **Seaboard Corporation**.

ILLUSTRATION 6.3 Receivables Balance Sheet Presentations

Molson Coors Brewing Company
(in thousands)

Current assets	
Cash and cash equivalents	$ 377,023
Accounts and notes receivable	
Trade, less allowance for doubtful accounts of $8,827	758,526
Current notes receivable and other receivables, less allowance for doubtful accounts of $3,181	112,626
Inventories	369,521
Maintenance and operating supplies, less allowance for obsolete supplies of $10,556	34,782
Other current assets, less allowance for advertising supplies of $948	124,336
Total current assets	$1,776,814

Seaboard Corporation
(in thousands)

Current assets		
Cash and cash equivalents		$ 47,346
Short-term investments		286,660
Receivables		
Trade	$251,005	
Due from foreign affiliates	90,019	
Other	26,349	367,373
Allowance for doubtful accounts		(8,060)
Net receivables		359,313
Inventories		392,946
Deferred income taxes		19,558
Other current assets		77,710
Total current assets		$1,183,533

Recognition of Accounts Receivable

Accounts receivable generally arise as part of a revenue arrangement. For example, if **Lululemon** sells a yoga outfit to Jennifer Burian for $100 on account, when does Lululemon recognize revenue and the related accounts receivable? As indicated in earlier chapters, the revenue recognition principle indicates that Lululemon should recognize revenue when it satisfies its performance obligation by transferring the good or service to the customer. It follows that in the Lululemon situation, the yoga outfit is transferred when Jennifer obtains control of this outfit.

When this change in control occurs, Lululemon recognizes an account receivable and sales revenue. Lululemon makes the following entry, assuming that $100 is the amount it expects to receive from Jennifer.

Accounts Receivable	100	
Sales Revenue		100

The concept of change of control is the deciding factor in determining when a performance obligation is satisfied and an account receivable recognized. Here are some key indicators to determine that Lululemon has transferred and that Jennifer has obtained control of the yoga outfit.

1. **Lululemon has the right to payment from the customer.** If Jennifer is obligated to pay, it indicates that control has passed to the customer.
2. **Lululemon has passed legal title to the customer.** If Jennifer has legal title to the goods, it indicates that control has passed to the customer.
3. **Lululemon has transferred physical possession of the goods.** If Jennifer has physical possession, it indicates that control has passed to the customer.
4. **Lululemon no longer has significant risks and rewards of ownership of the goods.** If Jennifer now has the significant risks and rewards of ownership, it indicates that control has passed to the customer.
5. **Jennifer has accepted the asset.**

Measurement of the Transaction Price

The **transaction price** is the amount of consideration that a company expects to receive from a customer in exchange for transferring goods or services. In the Lululemon case, the transaction price is easily determined because Jennifer Burian agrees to pay a fixed amount

to Lululemon over a short period of time. However, in other situations, companies must consider items such as variable consideration, which may affect the accounts receivable balance.

Variable Consideration

In some cases, the price of a good or service is dependent on future events. These future events often include such items as discounts, returns and allowances, rebates, and performance bonuses. Companies should record accounts receivable and related revenue at the amount of consideration expected to be received from a customer. [2] Here are four items that affect the transaction price and thus the accounts receivable balance: (1) trade discounts, (2) cash discounts, (3) sales returns and allowances, and (4) time value of money.

Trade Discounts

Prices may be subject to a trade or quantity discount. Companies use such **trade discounts** to avoid frequent changes in catalogs, to alter prices for different quantities purchased, or to hide the true invoice price from competitors. Trade discounts are commonly quoted in percentages.

For example, say you have an **Apple** smartphone that has a list price of $600, and Apple sells it to **Best Buy** for the list price less a 40% trade discount. Apple then records a sale of $360 [$600 × (1.0 − .40)]. Apple, per normal practice, simply deducts the trade discount from the list price and bills Best Buy the net amount, or $360 in this case.

Example 6.3
Trade Discount

FACTS Assume that **Ryobi** sells a cordless drill with suggested retail price of $99.99 to **Home Depot** for $70, a trade discount of approximately 30%. Home Depot, in turn, sells the drill for $99.99.

QUESTION What amount should Ryobi and Home Deport record as revenue for this transaction?

SOLUTION

Ryobi should report the net price of $70 as revenue, while Home Depot should record the retail price of $99.99 as revenue.

Cash Discounts (Sales Discounts)

Companies offer **cash discounts (sales discounts)** to induce prompt payment. Cash discounts are generally presented in terms such as 2/10, n/30 (2% discount if paid within 10 days, gross amount due in 30 days), or 2/10, E.O.M., net 30, E.O.M. (2% discount if paid any time by the 10th day of the following month, with full payment due by the 30th of the following month).

Customers usually take sales discounts unless their cash is severely limited. Why? A customer that receives a 1% reduction in the sales price for payment within 10 days, total payment due within 30 days, effectively earns 18.25% [.01 ÷ (20/365)], or at least avoids that rate of interest cost.

A company can record the sales discount using the gross method or the net method.

- Under the gross method, a company recognizes the receivable and related revenue at the invoice price.
- Under the net method, a company recognizes the accounts receivable and related revenue at the invoice price less the cash discount.

For example, assume that Hanley Company sells goods for $10,000 to Murdoch Inc. with terms 2/10, net 30, and Hanley expects that the discount will be taken. As a result, Hanley records the accounts receivable and related sales revenue at its net price of $9,800 [$10,000 − ($10,000 × .02)]. This approach is the **net method** as it attempts to value the receivable at its net realizable value.

Example 6.4
Cash Discounts

FACTS Armour Company sells goods for $10,000 to Ohara Inc. on April 1 with terms 1/10, net 15.

QUESTION How should Armour record this transaction using (a) the gross method, and (b) the net method?

SOLUTION

a. Gross method:

Accounts Receivable	10,000	
Sales Revenue		10,000

b. Net method:

Accounts Receivable [$10,000 − (.01 × $10,000)]	9,900	
Sales Revenue		9,900

As indicated, if Armour uses the gross method, it records the accounts receivable and related sales revenue at $10,000, not $9,900.

Continuing with Example 6.4, under the **gross method**, Armour debits Sales Discounts, a contra account to Sales Revenue, when it receives payment within the discount period. Armour's income statement then reports sales discounts as a deduction from sales revenue to arrive at net sales. If Armour uses the net method and the customer fails to take the discount, Armour credits a Sales Discount Forfeited account, which is shown in the "Other revenues and gains" section of the income statement.[3]

Example 6.5
Discount Not Taken

FACTS Hanley Company has the following transactions with Murdoch Inc.

1. On March 1, Hanley Company sells goods for $10,000 to Murdoch Inc. on March 1 with terms 2/10, net 30.
2. On March 8, Hanley receives a payment of $3,920 from Murdoch related to the sale on March 1.
3. On March 26, Hanley receives $6,000 related to the sale on March 1.

QUESTION What entries should Hanley in March make regarding the sale to Murdoch using the gross method and the net method?

SOLUTION

Gross Method			Net Method		
1. To record sales of $10,000, terms 2/10, n/30:					
Accounts Receivable	10,000		Accounts Receivable	9,800	
Sales Revenue		10,000	Sales Revenue		9,800
2. To record payment on $4,000 of sales received within discount period:					
Cash	3,920		Cash	3,920	
Sales Discounts ($4,000 × .02)	80		Accounts Receivable		3,920
Accounts Receivable		4,000			
3. To record payment on $6,000 of sales received after discount period:					
Cash	6,000		Cash	6,000	
Accounts Receivable		6,000	Accounts Receivable		5,880
			Sales Discounts Forfeited ($6,000 × .02)		120

The total amount of income reported on the income statement from this transaction is the same under the gross and net method—it is just the presentation that is different. Using the gross method, net sales revenue of $9,920 ($10,000 − $80) is shown in operating income. Under the net method, however, the net sales revenue of $9,800 is shown in operating income, while $120 of discounts forfeited is shown as "Other revenues and gains," below operating income. Under each method, the total increase to net income is $9,920.

[3]To the extent that discounts not taken reflect short-term financing, some argue that companies could use an interest revenue account to record these amounts.

Theoretically, the net method is correct because the receivable is stated at its net realizable value (assuming estimates are correct). However, most companies use the gross method for practical reasons.

- As shown in the example, an estimate may not materialize. As a result, the receivable and sales numbers may be incorrect.
- If collection periods are relatively short, any differences that arise between the two methods are immaterial.

Sales Returns and Allowances

Sales returns and allowances are common for many companies selling goods to customers. For example, assume that Falco Solar sells solar panels to customers on account. Falco grants the right of return for these panels for a variety of reasons (e.g., dissatisfaction with the product). To account for these sales returns and allowances, Falco should recognize the following two items

1. Revenue and Cost of Goods Sold when solar panels are sold.
2. An asset (and corresponding adjustment to Revenue and Cost of Goods Sold) for the goods returned from customers.

Example 6.6
Sales Returns and Allowances

FACTS On January 12, 2025, assume that **Polaroid** sells 100 cameras for $100 each on **account** to **Target**. Polaroid allows Target to return any unsold cameras within 45 days of purchase. The cost of each product is $60. Polaroid estimates that:

- Three cameras will be returned.
- The cost of recovering the products will be immaterial.
- The returned products are expected to be resold at a profit.

On January 24, Target returns two of the cameras because they were the wrong color. On January 31, Polaroid prepares financial statements and determines that it is likely that only one more camera will be returned.

QUESTION What entries should Polaroid make to record the sale on January 12, 2025, and related sales return and allowance on January 24, 2025?

SOLUTION

To record the sale of the cameras and related cost of goods sold:

January 12, 2025

Accounts Receivable	10,000	
Sales Revenue (100 × $100)		10,000
Cost of Goods Sold	6,000	
Inventory (100 × $60)		6,000

To record the return of two cameras:

January 24, 2025

Sales Returns and Allowances	200	
Accounts Receivable (2 × $100)		200
Returned Inventory	120	
Cost of Goods Sold (2 × $60)		120

The Sales Returns and Allowances account is a contra account to Sales Revenue. Sales Returns and Allowances will be deducted from Sales Revenue on the income statement to arrive at net sales. The Returned Inventory account is used to separate returned inventory from regular inventory.

Example 6.7
Adjusting Entries for Estimated Returns

FACTS Refer to Example 6.6. Assume that **Polaroid** is now ready to prepare financial statements on January 31, 2025. As indicated earlier, Polaroid originally estimated that the most likely outcome was that three cameras would be returned. Polaroid believes the original estimate is correct. Therefore, Polaroid expects one more camera to be returned.

QUESTION What adjusting entries should Polaroid make to account for expected returns?

SOLUTION

To record expected sales returns and the related reduction in cost of goods sold:

January 31, 2025		
Sales Returns and Allowances	100	
Refund Liability (1 × $100)		100
Estimated Inventory Returns	60	
Cost of Goods Sold (1 × $60)		60

The Refund Liability account is a liability for estimated future returns. The Estimated Inventory Returns account will generally be added to the Returned Inventory account at the end of the reporting period.

Examples 6.6 and 6.7 highlight the adjusting entry approach that most companies use, as follows.

At the date of sale, both sales revenue and accounts receivable are recorded at their gross amounts without consideration of sales returns and allowances.

At the end of the reporting period, adjusting entries are made, resulting in both sales revenues and accounts receivable being reported at net amounts, which reflect actual and estimated returns and allowances.

Most companies follow this approach because estimating net sales at the date of sale is often difficult and time-consuming. In addition, recording accounts receivable net at the sale date may lead to a lack of correspondence between the control account and the subsidiary ledger related to accounts receivable. By waiting to make the necessary adjusting entries at the end of the reporting period, information related to actual sales returns and allowances is available, and a company still achieves the FASB's objective of reporting accounts receivable and sales revenue at the expected amount the company is entitled to receive.[3]

Continuing with the information presented in Examples 6.6 and 6.7, for the month of January, **Polaroid**'s income statement reports the information presented in **Illustration 6.4**.

ILLUSTRATION 6.4 Income Statement Reporting

Sales revenue (100 × $100)	$10,000
Less: Sales returns and allowances ($200 + $100)	300
Net sales	9,700
Cost of goods sold (97 × $60)	5,820
Gross profit	$ 3,880

As a result, at the end of the reporting period, the net sales reflects the amount that Polaroid expects to be entitled to collect.

Polaroid reports the following information in the balance sheet as of January 31, 2025, as shown in **Illustration 6.5**.

ILLUSTRATION 6.5 Balance Sheet Reporting

Current assets	
Accounts receivable ($10,000 − $200)	$9,800
Returned inventory (including estimated) (3 × $60)	180
Current liabilities	
Refund liability	$100

Underlying Concepts

Materiality means it could make a difference to a decision-maker. The FASB believes that present value concepts can be ignored for short-term receivables. The overriding cost constraint is also applicable as the cost that companies would incur to calculate their accounts receivable at present value of future cash flows would likely outweigh the benefit of providing that information to users.

Time Value of Money

Another variable consideration issue relates to the time value of money.

- Ideally, a company should measure receivables in terms of their present value, that is, the discounted value of the cash to be received in the future.
- When expected cash receipts require a waiting period, the receivable face amount is not worth the amount that the company ultimately receives.

To illustrate, assume that **Best Buy** makes a sale on account for $1,000 with payment due in four months. The applicable annual rate of interest is 12%, and payment is made at the end of four months. The present value of that receivable is not $1,000 but $961.54 [$1,000 × .96154 ($PV_{1,4\%}$)]. In other words, the $1,000 Best Buy receives four months from now is not the same as the $1,000 received today.

Theoretically, any revenue after the period of sale is interest revenue. In practice, companies ignore interest revenue related to accounts receivable because the amount of the discount is not usually material in relation to the net income for the period (see **Underlying Concepts**). The profession specifically excludes from present value considerations "receivables arising from transactions with customers in the normal course of business which are due in customary trade terms not exceeding approximately one year." **[4]**

Put It into Practice LO 6.2 Record Credit Sales

FACTS You are provided with the following information for Max Glass.

1. On January 4, 2025, Max Glass sells $5,000 of hurricane glass to Oliver Company on account. The cost of this glass is $3,000. Max records the sale on account and records cost of goods sold.
2. On January 16, 2025, Max grants an allowance of $300 because some of the hurricane glass is defective and was discarded by Oliver.
3. On January 31, 2025, before preparing financial statements, Max estimates that another $100 in allowances will result related to its sale to Oliver due to defective glass.

INSTRUCTIONS

Prepare entries for these transactions and determine what will be reported in the financial statements on January 31, 2025.

SOLUTION

1. To record the sale and the related adjustment to cost of goods sold:

January 4, 2025

Accounts Receivable	5,000	
Sales Revenue		5,000
Cost of Goods Sold	3,000	
Inventory		3,000

2. To record an allowance given because of damaged hurricane glass:

January 16, 2025

Sales Returns and Allowances	300	
Accounts Receivable		300

3. To adjust for estimated allowances related to damaged hurricane glass:

	January 31, 2025	
Sales Returns and Allowances	100	
Refund Liability		100

As a result of these transactions, Max reports net sales revenue on the income statement of $4,600 ($5,000 − $300 − $100), which is the amount Max expects to receive from Oliver from the sale of the glass. In addition, Max reports on its balance sheet the estimated amount expected to be collected of its accounts receivable from Oliver of $4,700 ($5,000 − $300) and a refund liability of $100. The use of both Sales Returns and Allowances and Refund Liability accounts is helpful to management because they help identify potential problems associated with inferior merchandise, inefficiencies in filling orders, or delivery or shipment mistakes.

Note that if the hurricane glass were returned instead of an allowance provided, then entries to record cost of goods sold and inventory would have to be made in transactions 2 and 3. **In transaction 2, the following additional entry is made.**

Returned Inventory (.6 × $300)	180	
Cost of Goods Sold		180

In transaction 3, the following entry is made.

Estimated Returned Inventory (.6 × $100)	60	
Cost of Goods Sold		60

6.3 Valuation of Accounts Receivable

LEARNING OBJECTIVE 3

Explain accounting issues related to valuation of accounts receivable.

As one revered accountant aptly noted, the credit manager's idea of heaven probably would be a place where everyone (eventually) paid his or her debts.[4] Unfortunately, this situation often does not occur. For example, a customer may not be able to pay because of a decline in its sales revenue due to a downturn in the economy. Similarly, individuals may be laid off from their jobs or faced with unexpected hospital bills.

- Companies record credit losses as debits to Bad Debt Expense (or Uncollectible Accounts Expense).
- Such losses are a normal and necessary risk of doing business on a credit basis.

Two methods are used in accounting for uncollectible accounts: (1) the direct write-off method and (2) the allowance method. The direct write-off method, which records bad debt expense at the time a specific customer account is deemed uncollectible, is often used for tax purposes, but it is not allowed under GAAP unless the amount uncollectible is immaterial. The allowance method is acceptable under GAAP and is the method we will focus on in this section.

[4]William J. Vatter, *Managerial Accounting* (Englewood Cliffs, N.J.: Prentice-Hall, 1950), p. 60.

Direct Write-Off Method for Uncollectible Accounts (Non-GAAP)

Under the **direct write-off method**, when a company determines a particular account to be uncollectible, it charges the loss to Bad Debt Expense. Assume, for example, that on December 10, Cruz Co. writes off as uncollectible Yusado's $8,000 balance. The entry is as follows.

	December 10	
Bad Debt Expense	8,000	
Accounts Receivable (Yusado)		8,000

Under this method, Bad Debt Expense will show only **actual losses** from uncollectibles.

Supporters of the direct write-off-method contend that it records facts, not estimates. It assumes that a good account receivable resulted from each sale, and that later events revealed certain accounts to be uncollectible and worthless. From a practical standpoint, this method is simple and convenient to apply. However, the direct write-off method is theoretically deficient.

- It usually fails to record expenses in the same period as associated revenues.
- Receivables are not stated at the net amount expected to be collected on the balance sheet.

As a result, using the direct write-off method is not considered appropriate, except when the amount uncollectible is immaterial.

Allowance Method for Uncollectible Accounts (GAAP)

When a company sells goods and services on credit to customers, does the company know in advance which customers may not be able to pay? Of course not. If a company knew which customers would not pay, it would not extend credit to those customers.

- The **allowance method** of accounting for bad debts involves **estimating uncollectible accounts** at the end of each period.
- This ensures that companies state receivables on the balance sheet at the **net amount expected to be collected**, which is gross accounts receivable less estimated uncollectible accounts.
- Companies estimate uncollectible accounts using information about past and current events as well as forecasts of future collectability.

Many companies set their credit policies to provide for a certain percentage of uncollectible accounts. Failure to reach that percentage means that they are losing sales due to overly restrictive credit policies. Thus, the FASB requires the allowance method for financial reporting purposes when bad debts are material in amount. This method has three essential features:

1. Companies **estimate** uncollectible accounts receivable and compare the new estimate to the current balance in the allowance account.
2. Companies debit estimated increases in uncollectibles to Bad Debt Expense and credit them to Allowance for Doubtful Accounts, a contra asset account, through an adjusting entry at the end of each period.
3. When companies write off a specific customer account, they debit actual uncollectibles to Allowance for Doubtful Accounts and credit that amount to Accounts Receivable.

Example 6.8 Recording Uncollectible Accounts

FACTS In 2025, its first year of operations, Brown Furniture has credit sales of $1,800,000. At December 31, 2025, the company reported accounts receivable of $150,000 from those sales. The credit manager estimates that $10,000 of the receivable balance will be uncollectible.

QUESTION What is the adjusting entry to record the estimated uncollectibles (assuming a zero beginning balance in the allowance account)?

SOLUTION

To to record the estimate of uncollectible accounts:

	December 31, 2025	
Bad Debt Expense	10,000	
Allowance for Doubtful Accounts		10,000

Brown reports Bad Debt Expense in the income statement as an operating expense. Thus, Brown records the increased estimated uncollectibles as bad debt expense in the period of credit deterioration. The company deducts the allowance account from accounts receivable in the current assets section of the balance sheet as follows.

Brown Furniture Balance Sheet (partial)		
Current assets		
Cash		$ 15,000
Accounts receivable	$150,000	
Less: Allowance for doubtful accounts	10,000	140,000
Inventory		300,000
Prepaid insurance		25,000
Total current assets		$480,000

Allowance for Doubtful Accounts shows the estimated amount of accounts receivable that the company expects it will not collect in the future. The reasons for using an allowance account are as follows.

- Companies do not know which customers will not pay in the future; therefore, they cannot make a direct credit to Accounts Receivable for the estimate. The credit goes to the allowance account which is a contra account to Accounts Receivable.
- The credit balance in the allowance account will absorb the specific customer write-offs when they occur in the future.

For example, the net accounts receivable balance of $140,000 in the solution to Example 6.8 represents the **net amount expected to be collected** on the accounts receivable at the statement date. **Note that Allowance for Doubtful Accounts is a permanent account and therefore is not closed at the end of the accounting period.**

Recording the Write-Off of an Uncollectible Account

When companies have exhausted all means of collecting a past-due account and collection appears impossible, the company should write off the account. That simply means the company credits, or decreases, the customer's accounts receivable balance since it will not be collected.

Example 6.9
Write-Off of Uncollectible Account

FACTS The financial vice president of Brown Furniture authorizes a write-off of the $1,000 balance owed by Randall Co. on March 1, 2026.

QUESTION What is the entry to record the write-off of the Randall Co. receivable?

SOLUTION

To record the write-off of the Randall Co. account:

	March 1, 2026	
Allowance for Doubtful Accounts	1,000	
Accounts Receivable (Randall Co.)		1,000

In Example 6.9, Brown Furniture does not increase bad debt expense when the write-off occurs. **Under the allowance method, companies debit every bad debt write-off to the allowance account rather than to Bad Debt Expense**. Here's why:

- A debit to Bad Debt Expense would be incorrect because the company has already recognized the expense when it made the adjusting entry for estimated bad debts. Remember, the adjusting entry is made in the year of credit deterioration, which is 2025 in the Brown example.
- The entry to record the write-off of an uncollectible account reduces both Accounts Receivable and Allowance for Doubtful Accounts.

After posting, the general ledger accounts appear as shown in Illustration 6.6.

ILLUSTRATION 6.6 Account Balances After Write-Off

Accounts Receivable				Allowance for Doubtful Accounts			
Jan. 1 Bal.	150,000	Mar. 1	1,000	Mar. 1	1,000	Jan. 1 Bal.	10,000
Mar. 1 Bal.	149,000					Mar. 1 Bal.	9,000

A write-off affects **only balance sheet accounts**—not income statement accounts. The write-off of the account reduces both Accounts Receivable and Allowance for Doubtful Accounts. Cash realizable value in the balance sheet, therefore, remains the same, as Illustration 6.7 shows.

ILLUSTRATION 6.7 Cash Realizable Value

	Before Write-Off	After Write-Off
Accounts receivable	$150,000	$149,000
Allowance for doubtful accounts	10,000	9,000
Cash realizable value	**$140,000**	**$140,000**

Recovery of an Uncollectible Account

Occasionally, a company collects from a customer after it has written off the account as uncollectible. The company makes two entries to record the recovery of a bad debt.

1. It reverses the entry made in writing off the account. This reinstates the customer's account.
2. It journalizes the collection in the usual manner.

Example 6.10
Recovery of Uncollectible Account

FACTS On July 1, 2026, Randall Co. pays the $1,000 amount that Brown Furniture had written off on March 1.

QUESTION What entry (entries) should Brown make to record this recovery?

SOLUTION

July 1, 2026

To reverse write-off of account:

Accounts Receivable (Randall Co.)	1,000	
Allowance for Doubtful Accounts		1,000

To record collection of the Randall account:

Cash	1,000	
Accounts Receivable (Randall Co.)		1,000

Note that the recovery of a bad debt, like the write-off of a bad debt, affects **only balance sheet accounts**. The net effect of the two entries above is a debit to Cash and a credit to Allowance for Doubtful Accounts for $1,000.

Estimating the Allowance

To simplify the preceding explanation, we assumed we knew the amount of the expected uncollectibles. In "real life," companies must estimate that amount when they use the allowance method. There is much judgment involved in developing the estimate, but the goal is to develop the best estimate of expected uncollectible receivables. Companies can estimate the percentage of outstanding receivables that will become uncollectible, without identifying specific accounts. This procedure, referred to as the **percentage-of-receivables approach**, provides a reasonably accurate estimate of the receivables' realizable value.[5]

- Companies may apply the percentage-of-receivables approach using one **composite rate**, or percentage, that reflects an estimate of the uncollectible receivables.
- Or, companies may set up an **aging schedule** of accounts receivable, which applies a different percentage based on past experience to the various age categories.

An aging schedule also serves as a control device by identifying which accounts require special attention based on how long they have been past due. The aging schedule of Aloha Coffee Company in Illustration 6.8 is an example.

ILLUSTRATION 6.8 Accounts Receivable Aging Schedule

Aloha Coffee Company
Aging Schedule

Name of Customer	Balance Dec. 31	Under 30 Days	30–60 Days	61–90 Days	91–120 Days	Over 120 Days
Honolulu Cafes	$ 98,000	$ 15,000	$ 65,000	$18,000		
Hilo Food Mart	320,000	280,000	40,000			
Beaches Cafe	55,000					$55,000
Whale Coffee Shops	74,000	50,000	10,000		$14,000	
	$547,000	$345,000	$115,000	$18,000	$14,000	$55,000

[5]In contrast to prior impairment rules, which recorded bad debts only when a loss had occurred, companies must adjust estimates for the possibility that expectations about losses may not be reflected in historical data. That is, companies are required to estimate credit losses over the entire contractual term of the receivables. [5]

ILLUSTRATION 6.8 (continued)

Age	Amount	Percentage Estimated to Be Uncollectible*	Required Balance in Allowance
Under 30 days	$345,000	0.8%	$ 2,760
30–60 days	115,000	4.0	4,600
61–90 days	18,000	15.0	2,700
91–120 days	14,000	20.0	2,800
Over 120 days	55,000	25.0	13,750
Year-end balance of allowance for doubtful accounts			**$26,610**

*Estimates are based on historical loss rates, taking into consideration whether the historical loss rates differ from what is currently expected over the life of the receivables (on the basis of current conditions and reasonable and supportable forecasts about the future).

In Illustration 6.8, Aloha Coffee reports a balance of $26,610 in Allowance for Doubtful Accounts. If there is no beginning balance in its allowance account, the company will debit bad debt expense for this same amount.[6]

What happens if we change the illustration slightly **and assume that the allowance account had a beginning credit balance of $800 before adjustment**? Remember, since bad debt expense is an estimate, there will be "leftover" amounts in the allowance account from period to period. If the leftover balance is a credit, that means the company overestimated and did not write off as many accounts as expected. If the leftover balance is a debit, that means the company underestimated and wrote-off more accounts than expected. To prevent the leftover balances from growing too large over time, a company will adjust the allowance account each period and incorporate the balance that is already in the account.

Returning to the Aloha Coffee example, a leftover credit balance of $800 means Aloha overestimated from the previous period. From the aging schedule in Illustration 6.8, Aloha wants to reflect a year-end credit balance of $26,610 in the allowance account. Since the account already has an $800 credit balance, Aloha only needs to adjust the account by $25,810 ($26,610 − $800) by making the following entry.

Bad Debt Expense	25,810	
Allowance for Doubtful Accounts		25,810

After Aloha posts the adjusting entry, its accounts appear as shown in Illustration 6.9.

ILLUSTRATION 6.9 Bad Debt Expense After Posting

Bad Debt Expense		Allowance for Doubtful Accounts	
Dec. 31 Adj. **25,810**			Dec. 31 Bal. 800
			Dec. 31 Adj. **25,810**
			Dec. 31 Adj. bal. 26,610

Now let's change the Aloha example again and assume there was a $1,000 **debit** balance in the allowance account before adjustment. The adjusting entry would be for $27,610 ($26,610 + $1,000) to arrive at a credit balance of $26,610, as follows.

Bad Debt Expense	27,610	
Allowance for Doubtful Accounts		27,610

After Aloha posts the adjusting entry, its accounts appear as shown in Illustration 6.10.

ILLUSTRATION 6.10 Bad Debt Expense After Posting

Bad Debt Expense		Allowance for Doubtful Accounts	
Dec. 31 Adj. **27,610**		Dec. 31 Bal. 1,000	Dec. 31 Adj. **27,610**
			Dec. 31 Adj. bal. 26,610

[6]The expected loss model does not specify a recognition threshold (e.g., probable and estimable) to record an allowance for uncollectible accounts. As a result, companies must measure expected uncollectible accounts and record bad debt expense on all receivables, even those with a low risk of loss (e.g., receivables that are not past due). Thus, in the Aloha Coffee example, an estimate for uncollectible accounts is developed for balances that are under 30 days past due.

Notice that no matter what the prior balance in the allowance account may be, the goal is for the ending balance to be the current estimate for uncollectible amounts, which is $26,610 in the Aloha example.

In summary, the percentage-of-receivables basis provides an estimate of the cash realizable value of the receivables. It also provides a reasonable matching of expenses (bad debt) to revenue (sales). The FASB employs a **current expected credit loss (CECL) model** that requires companies to measure expected uncollectible accounts and record bad debt expense on **all** receivables.[7]

Companies use sophisticated models employing data analytics to arrive at more precise estimates on a timely basis. In the Aloha example, the aging analysis was used to classify receivables according to a risk factor (days past due) that is related to the collectibility of the receivables. Other approaches are acceptable as long as the estimation techniques are applied consistently over time with the objective of faithfully estimating expected uncollectible accounts. **[6]** For example, a company may use historical loss ratios for customers with different credit ratings as a basis for estimating uncollectible accounts. Or, the discounted cash flow approach is generally appropriate when analyzing an individual loan or receivable (we present a comprehensive example of this approach in Appendix 6B).

Analytics in Action: Predicting the Future

Any time a company sells a product or provides a service to a customer and agrees to accept payment at a later date, there is some risk of nonpayment. Advances in data analytics allow companies to not only proactively evaluate their customer base and credit policies before sales are made but also to better estimate their allowance for bad debts at each reporting date.

Under the **current expected credit loss (CECL) model**, companies look at both historical write-offs as well as forward-looking data to best estimate the total allowance for existing receivables. With data analytics, companies can take advantage of vast amounts of data available to not only track historical, company, and customer-specific trends, but also develop relationships with broader economic indicators. For example, consider a company that correlates changes in U.S. unemployment rates with its bad debt percentages. Management may begin its estimate of bad debts using historical loss rates for each accounts receivable aging category but then adjust that historical loss rate with anticipated trends in unemployment percentages.

Predictive data analytics will allow companies to fine-tune their estimates of allowance for doubtful accounts and provide the most relevant information to users of the financial statements.

Source: Mark D. Mishler, "CECL Isn't Just for Banks Anymore," *Journal of Accountancy* (November 1, 2019).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Put It into Practice LO 6.3
Estimate and Record Bad Debts

FACTS Rianna.com uses the allowance method of accounting for bad debts. The company produced the following aging of the accounts receivable at year-end.

		Number of Days Outstanding				
	Total	**0–30**	**31–60**	**61–90**	**91–120**	**Over 120**
Accounts receivable	$377,000	$222,000	$90,000	$38,000	$15,000	$12,000
% uncollectible		1%	4%	5%	8%	10%
Estimated bad debts						

INSTRUCTIONS

a. Calculate the total estimated bad debts based on the above information.

b. Prepare the year-end adjusting journal entry to record the bad debts using the aged uncollectible accounts receivable determined in (a). Assume the unadjusted balance in Allowance for Doubtful Accounts is a $4,000 debit.

[7] In general, estimating bad debt expense with a focus on the income statement (e.g., percentage-of-sales) is not appropriate. That is, the goal is to arrive at an estimate in the allowance, which reduces the receivables amount to the net amount expected to be collected. While a percentage-of-sales approach may provide a better "matching" of bad debt expense to sales, the balance in the allowance likely will not provide a representationally faithful estimate of the net amount expected to be collected.

c. Of the above accounts, $5,000 is determined to be specifically uncollectible. Prepare the journal entry to write off the uncollectible account.

d. The company collects $5,000 subsequently on a specific account that had previously been determined to be uncollectible in (c). Prepare the journal entry (entries) necessary to restore the account and record the cash collection.

e. Comment on how your answers to (a)–(d) would change if Rianna.com used 3% of total accounts receivable, rather than aging the accounts receivable. What are the advantages to the company of aging the accounts receivable rather than applying a percentage to total accounts receivable?

SOLUTION

a.

		Number of Days Outstanding				
	Total	**0–30**	**31–60**	**61–90**	**91–120**	**Over 120**
Accounts receivable	$377,000	$222,000	$90,000	$38,000	$15,000	$12,000
% uncollectible		1%	4%	5%	8%	10%
Estimated bad debts	$10,120	$2,220	$3,600	$1,900	$1,200	$1,200

b.

Bad Debt Expense		14,120	
Allowance for Doubtful Accounts ($10,120 + $4,000)			14,120

Bad Debt Expense takes into account any existing balance in the allowance account.

Allowance for Doubtful Accounts

Beg. bal.	4,000		
		(b)	14,120
			10,120
(c)	5,000		
		(d)	5,000
			10,120

c.

Allowance for Doubtful Accounts	5,000	
Accounts Receivable		5,000

d.

Accounts Receivable	5,000	
Allowance for Doubtful Accounts		5,000
Cash	5,000	
Accounts Receivable		5,000

e. If Rianna.com used 3% of total accounts receivable rather than aging the individual accounts, the bad debt expense adjustment would be $15,310 [($377,000 × .03) + $4,000]. Aging the individual accounts rather than applying a percentage to the total accounts receivable should produce a more accurate estimate of the allowance and bad debt expense.

6.4 Notes Receivable

LEARNING OBJECTIVE 4

Explain accounting issues related to recognition and valuation of notes receivable.

A note receivable is supported by a formal **promissory note**, a written promise to pay a certain sum of money at a specific future date. Such a note is a negotiable instrument that a **maker** signs in favor of a designated **payee** who may legally and readily sell or otherwise transfer the note to others. Although all notes contain an interest element because of the time value of money, companies classify them as interest-bearing or non-interest-bearing as follows.

- **Interest-bearing notes** have a stated rate of interest.
- **Zero-interest-bearing notes** (non-interest-bearing) include interest as part of their face amount.

Notes receivable are considered fairly liquid, even if long-term, because companies may easily convert them to cash (although they might pay a fee to do so).

Companies frequently accept notes receivable from customers who need to extend the payment period of an outstanding receivable. Or, they require notes from high-risk or new customers. In addition, companies often use notes in loans to employees and subsidiaries, and in the sales of property, plant, and equipment. In some industries (e.g., the pleasure and sport boat industry), notes support all credit sales. The majority of notes, however, originate from lending transactions. The basic issues in accounting for notes receivable are the same as those for accounts receivable: **recognition**, **valuation**, **and disposition**.

Recognition of Notes Receivable

Companies record and report long-term notes receivable at the **present value of the cash they expect to collect**. It is important to understand the interest rates that are involved when determining the present value:

- **Stated (nominal or face) interest rate**. The interest rate written into the notes receivable contract. The stated rate represents the cash rate of interest paid by the borrower.
- **Effective-interest rate (market rate or effective yield)**. The interest rate used in the market to determine the value of the note, also referred to as the discount rate used to determine present value.

When the stated interest rate on an interest-bearing note equals the effective interest rate, the note sells at face value.[8] When the two interest rates are not equal, the present value of the note will be different from the face value of the note. Companies then record this difference, either a discount or a premium, and amortize it over the life of a note to approximate the effective (market) interest rate. This illustrates one of the many situations in which time value of money concepts are applied to accounting measurement.

Note Issued at Face Value

To illustrate the discounting of a note issued at face value, assume that Fjords Unlimited lends Scandinavian Imports $10,000 in exchange for a $10,000, three-year note bearing interest at 10% annually. The market rate of interest for a note of similar risk is also 10%. We show the time diagram depicting both cash flows in **Illustration 6.11**.

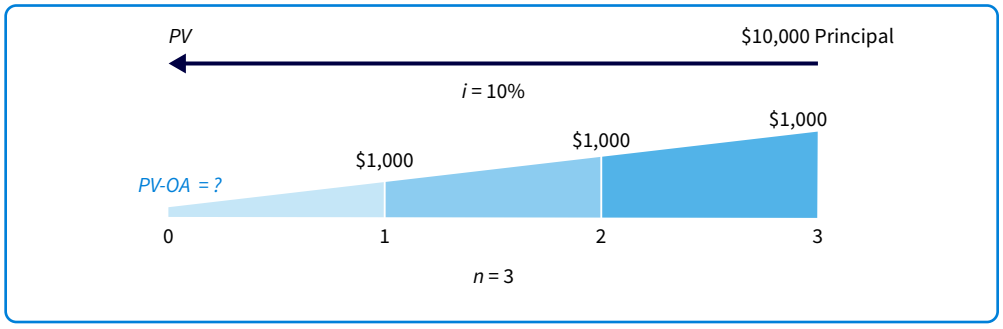


ILLUSTRATION 6.11 Time Diagram for Note Issued at Face Value

Fjords Unlimited computes the present value or exchange price of the note as shown in **Illustration 6.12**.

[8]The **stated interest rate,** also referred to as the face rate or the coupon rate, is the rate contracted as part of the note. The **effective-interest rate**, also referred to as the market rate or effective yield, is the rate used in the market to determine the value of the note—that is, the discount rate used to determine present value.

ILLUSTRATION 6.12 Present Value of Note—Stated and Market Rates the Same

Face value of the note		$10,000
Present value of the principal: $10,000 ($PVF_{3,10\%}$) = $10,000 × .75132	$7,513	
Present value of the interest: $1,000 ($PVF\text{-}OA_{3,10\%}$) = $1,000 × 2.48685	2,487	
Present value of the note		(10,000)
Difference		**$ 0**

As indicated in Illustration 6.12, the present value of the note equals its face value because the effective (market) and stated rates of interest are the same.

Example 6.11 Note Receivable Entries

FACTS Use information on the note receivable from Illustration 6.11.

QUESTION What entries does Fjords Unlimited make for the Scandinavian note when (a) the note is received and (b) interest earned in each year?

SOLUTION

a. To record the receipt of the note:

Notes Receivable	10,000	
Cash		10,000

b. To record the interest earned each year:

Cash	1,000	
Interest Revenue ($10,000 × .10)		1,000

As indicated, we can use Excel to calculate the present value of the note, or a financial calculator may also be used. *See Appendices 5A and 5B for specific guidance on using Excel and financial calculators to solve time value of money problems.*

Excel Solution

i	10%	
n	3	
PMT	–$1,000	($10,000 × .10)
FV	–$10,000	
PV	$10,000	

PV(rate, nper, pmt, [fv], [type])

Note Not Issued at Face Value

Zero-Interest-Bearing Notes The name "zero-interest-bearing note" is a bit misleading.

- Interest is associated with the note, but there are no regular, cash interest payments made on the note.
- Instead, the cash received by the borrower when the note is first executed is less than face value, but the borrower must pay back the full face value on the maturity date of the note.

If a company receives a zero-interest-bearing note, its present value is the cash paid to the borrower.

To illustrate, Jeremiah Company receives a three-year, $10,000 zero-interest-bearing note and gives cash of $7,721.80 to the issuer of the note (the borrower). At the end of three years, Jeremiah will receive $10,000 from the issuer. Because Jeremiah knows both the future value ($10,000) and the present value ($7,721.80) of the note, Jeremiah can compute the interest rate. This rate is referred to as the **implicit interest rate,** computed as follows.

$$\begin{aligned} PV &= FV \times PVF_{3,i} \\ PVF_{3,i} &= \$7{,}721.80 \div \$10{,}000 \\ &= .77218 \end{aligned}$$

Using the table for the Present Value of 1 for 3 periods, the implicit interest rate is 9%.

We show the time diagram depicting the one cash flow in Illustration 6.13.

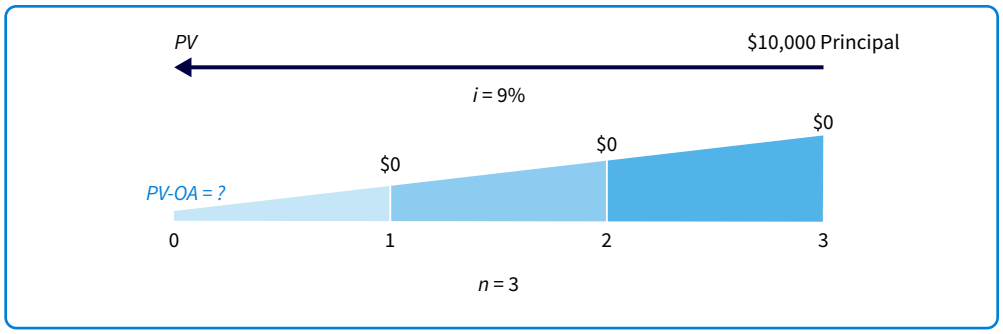


ILLUSTRATION 6.13 Time Diagram for Zero-Interest-Bearing Note

The difference between the future value and present value of $2,278.20 ($10,000 − $7,721.80) is called a discount, and it represents the implied, or effective, interest on the note. Jeremiah records the transaction as follows.

Notes Receivable	10,000.00	
Discount on Notes Receivable ($10,000 − $7,721.80)		2,278.20
Cash		7,721.80

Excel Solution

n	3	
PMT	$0	(0%)
PV	**–$7,721.80**	
FV	$10,000	
RATE	9%	

RATE(nper, pmt, pv, [fv], [type], [guess])

Discount on Notes Receivable is a valuation account. Companies report it on the balance sheet as a contra asset account to notes receivable. Going forward, Jeremiah will amortize, or allocate, the discount to interest revenue over the three years of the note using the **effective-interest method**.

- With the effective-interest method, the carrying value of the note is multiplied by the implied interest rate to determine the amount of interest revenue for the period.
- The difference between cash interest payments ($0 in this example) and interest revenue is the amount of discount that will be amortized each period.

Illustration 6.14 shows the three-year discount amortization and interest revenue schedule. Notice that by the end of year 3, the carrying amount of the note is the face value which is the amount Jeremiah will receive from the issuer.

ILLUSTRATION 6.14 Discount Amortization Schedule—Effective-Interest Method

Schedule of Note Discount Amortization
Effective-Interest Method
0% Note Discounted at 9%

	Cash Interest Received	Interest Revenue	Discount Amortized	Carrying Amount of Note
Date of issue				$ 7,721.80
End of year 1	$-0-	$ 694.96[a]	$ 694.96	8,416.76[b]
End of year 2	-0-	757.51	757.51	9,174.27
End of year 3	-0-	825.73	825.73[c]	10,000.00
	$-0-	$2,278.20	$2,278.20	

[a] $7,721.80 × .09
[b] $7,821.80 + $694.96
[c] $.05 adjustment to compensate for rounding

Jeremiah records interest revenue at the end of the first year using the effective-interest method as follows.

Discount on Notes Receivable	694.96	
Interest Revenue ($7,721.80 × .09)		694.96

Jeremiah records interest revenue at the end of the second year using the effective-interest method as follows.

Discount on Notes Receivable	757.51	
Interest Revenue ($8,416.76 × .09)		757.51

Discount on Notes Receivable

		Beg. bal.	2,278.20
Year 1	694.96		
Year 2	757.51		
Year 3	825.73		
		End. bal.	0.00

Jeremiah records interest revenue at the end of the third year using the effective-interest method as follows.

Discount on Notes Receivable	825.73	
Interest Revenue ($10,000 − $9,174.27)		825.73

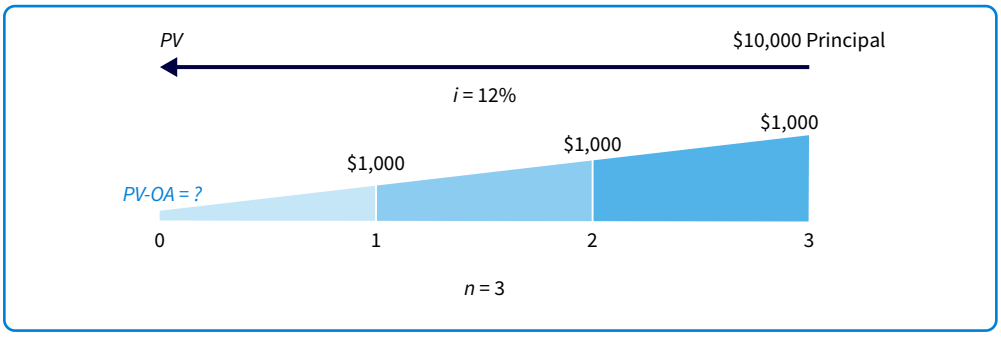
As the carrying amount of the note increases, so too does the amount of interest revenue reported on Jeremiah's income statement.

The amount of the discount, $2,278.20 in this case, represents the interest revenue Jeremiah will earn from the note over the three years. Note that by the end of year three when the discount is fully amortized, the carrying amount of the note is the face value. Jeremiah will make the following entry when the issuer pays the note at maturity at the end of year three.

Cash	10,000	
Note Receivable		10,000

Interest-Bearing Notes Often, the stated rate and the effective rate differ. The zero-interest-bearing note is one example. To illustrate a more common situation, assume that Morgan Corp. makes a loan to Marie Co. and receives in exchange a three-year, $10,000 note bearing interest at 10% annually. The market rate of interest for a note of similar risk is 12%. We show the time diagram depicting both cash flows in Illustration 6.15.

ILLUSTRATION 6.15 Time Diagram for Interest-Bearing Note



Morgan computes the present value of the two cash flows as shown in Illustration 6.16.

Excel Solution

i	12%	
n	3	
PMT	–$1,000	(.10 × $10,000)
FV	–$10,000	
PV	$9,520	

PV(rate, nper, pmt, [fv], [type])

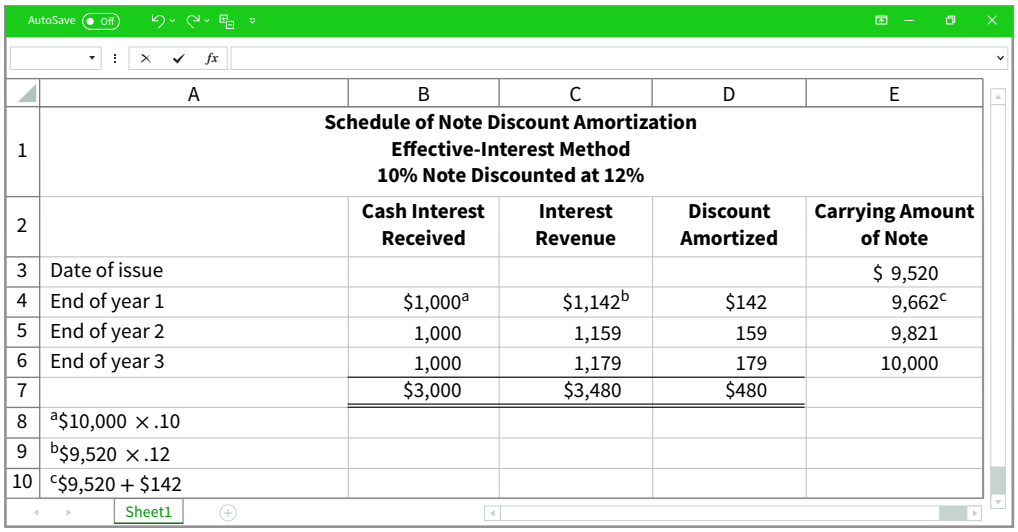
ILLUSTRATION 6.16 Computation of Present Value—Effective Rate Different from Stated Rate

Face value of the note		$10,000
Present value of the principal:		
$10,000 ($PVF_{3,12\%}$) = $10,000 × .71178	$7,118	
Present value of the interest:		
$1,000 ($PVF\text{-}OA_{3,12\%}$) = $1,000 × 2.40183	2,402	
Present value of the note		(9,520)
Difference (discount)		$ 480

In this case, because the effective rate of interest (12%) exceeds the stated rate (10%), the present value of the note is less than the face value. That is, Morgan exchanged the note at a **discount**. Morgan records the receipt of the note at a discount as follows.

Notes Receivable	10,000	
Discount on Notes Receivable		480
Cash		9,520

Morgan then amortizes the discount and recognizes interest revenue annually using the effective-interest method. Illustration 6.17 shows the three-year discount amortization and interest revenue schedule.



	A	B	C	D	E
1	**Schedule of Note Discount Amortization Effective-Interest Method 10% Note Discounted at 12%**				
2		**Cash Interest Received**	**Interest Revenue**	**Discount Amortized**	**Carrying Amount of Note**
3	Date of issue				$ 9,520
4	End of year 1	$1,000[a]	$1,142[b]	$142	9,662[c]
5	End of year 2	1,000	1,159	159	9,821
6	End of year 3	1,000	1,179	179	10,000
7		$3,000	$3,480	$480	
8	[a]$10,000 × .10				
9	[b]$9,520 × .12				
10	[c]$9,520 + $142				

Sheet1

ILLUSTRATION 6.17 Discount Amortization Schedule—Effective-Interest Method

On the date of issue, the note has a present value of $9,520. Its unamortized discount—additional interest revenue spread over the three-year life of the note—is $480.

At the end of year 1, Morgan receives $1,000 in cash. But its interest revenue is $1,142 ($9,520 × .12). The difference between $1,000 and $1,142 is the amortized discount, $142. In a discount situation, the recorded interest revenue will always be greater than the cash interest received. Morgan records receipt of the annual interest and amortization of the discount for the first year as follows (amounts per amortization schedule).

Cash	1,000	
Discount on Notes Receivable	142	
Interest Revenue		1,142

Discount on Notes Receivable

Amort.		Beg. bal.	480
Year 1	142		
			338
Year 2	159		
Year 3	179		
		End. bal.	0

The carrying amount of the note is now $9,662 ($9,520 + $142).

In the second year, Morgan again receives $1,000 in cash and makes the following entry (amounts per amortization schedule).

Cash	1,000	
Discount on Notes Receivable	159	
Interest Revenue		1,159

At the end of the third year, Morgan again receives $1,000 in cash and amortizes the remaining discount in the following entry (amounts per amortization schedule).

Cash	1,000	
Discount on Notes Receivable	179	
Interest Revenue		1,179

Also at the end of the third year, Morgan will make the following entry when the issuer pays the face amount of the note at maturity:

Cash	10,000	
Notes Receivable		10,000

When the present value exceeds the face value, which means the stated rate is greater than the effective rate, the note is exchanged at a **premium**. Companies record the premium on a note receivable as a debit and amortize it using the effective-interest method over the life of the note as annual **reductions** in the amount of interest revenue recognized. Therefore, in a premium situation, the recorded interest revenue will always be less than the cash interest received.

Notes Received for Property, Goods, or Services When a **note is received in exchange for property, goods, or services** in a bargained transaction entered into at arm's length, the stated interest rate is presumed to be fair unless:

1. No interest rate is stated, **or**
2. The stated interest rate is unreasonable, **or**
3. The face amount of the note is materially different from the current cash sales price for the same or similar items or from the current fair value of the debt instrument. [7]

In these circumstances, the company measures the present value of the note by the fair value of the property, goods, or services or by an amount that reasonably approximates the fair value of the note.

Example 6.12
Note Received for Land

Excel Solution

n	5
PMT	$0
PV	–$20,000
FV	**$35,247**
RATE	12%

RATE(nper, pmt, pv, [fv], [type], [guess])

FACTS Assume that Oasis Development Co. sold a corner lot to **Rusty Pelican** as a restaurant site. Oasis accepted in exchange a 5-year note having a maturity value of $35,247 and no stated interest rate. The land originally cost Oasis $14,000. At the date of sale, the land had a fair value of $20,000. Given the criterion above, Oasis uses the fair value of the land, $20,000, as the present value of the note.

QUESTION What entry does Oasis make to record the sale of the land in exchange for the note receivable?

SOLUTION

Oasis records the sale as follows.

Notes Receivable	35,247	
Discount on Notes Receivable ($35,247 – $20,000)		15,247
Land		14,000
Gain on Disposal of Land ($20,000 – $14,000)		6,000

Oasis amortizes the discount to interest revenue over the 5-year life of the note using the effective-interest rate of 12%.

Choice of Interest Rate

In note transactions, other factors involved in the exchange, such as the fair value of the property, goods, or services, determine the effective or real interest rate. But, if a company cannot determine that fair value and if the note has no ready market, determining the present value of the note is more difficult. To estimate the present value of a note under such circumstances, the company must:

- Approximate an applicable interest rate that may differ from the stated interest rate. This process of interest-rate approximation is called **imputation** and results in an **imputed interest rate**.
- Determine the imputed interest rate when it receives the note. The company ignores any subsequent changes in prevailing interest rates.

What factors affect the choice of an interest rate? Items such as the prevailing rates for similar instruments, the existing prime interest rate, restrictive covenants, collateral, and payment schedule affect the choice of an imputed interest rate.

Valuation of Notes Receivable

Like accounts receivable, companies record and report short-term notes receivable at the net amount expected to be collected—that is, at the face amount less all necessary allowances. The primary notes receivable allowance account is Allowance for Doubtful Accounts.

- The estimations involved in valuing short-term notes receivable and in recording bad debt expense and the related allowance **exactly parallel that for trade accounts receivable**.
- Companies estimate the amount of uncollectibles by an analysis of the receivables.

Long-term notes receivable involve additional estimation problems. For example, the value of a note receivable can change significantly over time from its original cost. That is, with the

passage of time, historical numbers become less and less relevant. As discussed earlier (in Chapters 1, 3, and 4), the FASB requires that for financial instruments such as receivables, companies disclose not only their cost but also their fair value in the notes to the financial statements.

Put It into Practice LO 6.4

Record Note Receivable and Interest

FACTS On December 31, 2025, Vincent Company rendered building restoration services to Sylvie Corporation at an agreed price of $102,049, accepting $40,000 down and agreeing to accept the balance in four equal installments of $20,000 receivable each December 31. An assumed interest rate of 11% is imputed.

INSTRUCTIONS

Prepare the entries that would be recorded by Vincent for (a) the sale in exchange for cash and the note receivable (prepare an amortization schedule), and (b) the cash receipts and interest on the following dates. (Assume that the effective-interest method is used for amortization purposes.)

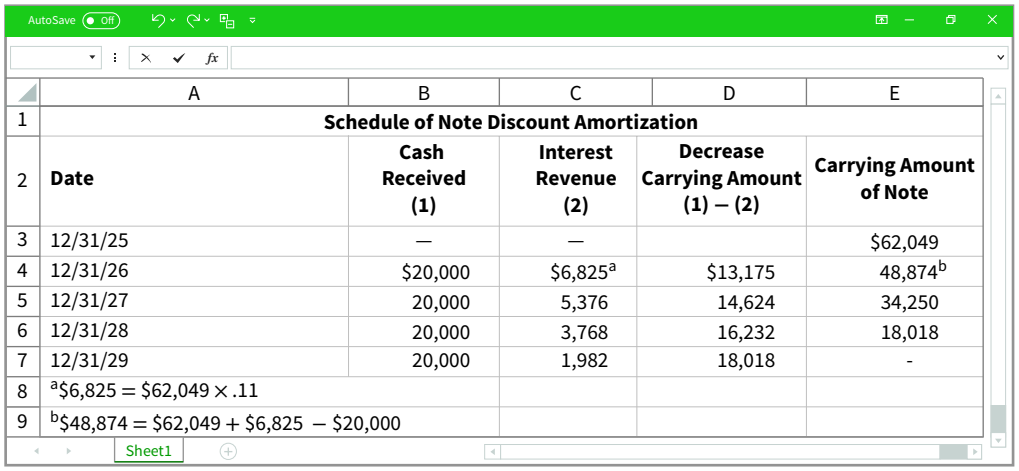
1. December 31, 2026.
2. December 31, 2029.

SOLUTION

The amortization schedule is as follows.

a. To record revenue at the present value of the note plus the immediate cash payment:

PV of $20,000 annuity at 11% for 4 years ($20,000 × 3.10245)	$ 62,049
Down payment	40,000
Value of services	$102,049



	A	B	C	D	E
1	**Schedule of Note Discount Amortization**				
2	**Date**	**Cash Received (1)**	**Interest Revenue (2)**	**Decrease Carrying Amount (1) − (2)**	**Carrying Amount of Note**
3	12/31/25	—	—		$62,049
4	12/31/26	$20,000	$6,825[a]	$13,175	48,874[b]
5	12/31/27	20,000	5,376	14,624	34,250
6	12/31/28	20,000	3,768	16,232	18,018
7	12/31/29	20,000	1,982	18,018	-
8	[a]$6,825 = $62,049 × .11				
9	[b]$48,874 = $62,049 + $6,825 − $20,000				

Sheet1

December 31, 2025		
Cash	40,000	
Notes Receivable	80,000	
Discount on Notes Receivable ($80,000 − $62,049)		17,951
Service Revenue		102,049

b. Entries, with amounts based on the amortization schedule, are as follows.

December 31, 2026		
Cash	20,000	
Notes Receivable		20,000
Discount on Notes Receivable	6,825	
Interest Revenue		6,825
December 31, 2029		
Cash	20,000	
Notes Receivable		20,000
Discount on Notes Receivable	1,982	
Interest Revenue		1,982

6.5 Other Issues

LEARNING OBJECTIVE 5

Explain additional accounting issues related to accounts and notes receivable.

Two additional special issues for accounting and reporting of receivables relate to the following.

1. Disposition of receivables.
2. Presentation and analysis.

Disposition of Receivables

The old saying that "cash is king" was never more important to businesses than when Covid-19 hit and left so many companies in serious financial difficulties. Even in good times, cash flows are probably the most important financial numbers to understand, particularly for a small or mid-sized business. You can have profits, but positive cash flows generally mean the success or failure of a business. We now look at two common approaches for small and mid-sized companies (and in some cases large companies) to ensure that cash is available to help make their business successful.

Common Financing Options

Congratulations—you are the owner of the Electric Bike Company (EBC), and sales are booming. To meet demand, you allow customers to make down payments and sign an agreement to make final payment when the goods are delivered. However, the manufacturing process takes time and requires significant upfront capital investment. How are you going to solve this cash flow problem? Here are three possibilities, assuming you cannot increase cash sales or extend payments to creditors.

1. Find a rich relative or friend to give you cash outright.
2. Sell your receivables to a third party.
3. Take out a loan.

We wish you luck with the first alternative and suspect that the chances are unlikely. Let's look at the other two possibilities, starting with the sale of the receivables.

Sale of Receivables If you decide to sell your receivables, you will have to find someone to buy them—that party is often a factor. **Factors** are companies that buy receivables for a fee and then collect the payments directly from customers.[9] A sale of receivables can be arranged in one of two ways.

1. Sale **without recourse**. This means that the factor assumes the credit-risk of some customers not paying their accounts receivable balance.
2. Sale **with recourse**. This means that if a receivable becomes uncollectible, you will be responsible.

It follows that a factor will charge you more for the without recourse approach, because the factor is taking on more risk by being responsible for any bad debts.

[9]Some **purchasers** of receivables buy them to obtain the legal protection of ownership rights afforded a purchaser of assets versus the lesser rights afforded a secured creditor. In addition, banks and other lending institutions may need to purchase receivables because of legal lending limits. That is, they cannot make any additional loans but they can buy receivables and charge a fee for this service.

Sale without Recourse As discussed, for receivables sold **without recourse** (nonrecourse), the seller of the receivable assumes no responsibility for any credit losses associated with the transferred receivables. The transfer of accounts receivable in a nonrecourse transaction is therefore an outright sale of the receivables both in form (transfer of title) and substance (transfer of control). In nonrecourse transactions (similar to any sale of assets), the seller:

1. Debits Cash for the proceeds and credits Accounts Receivable for the face value of the receivables.
2. Recognizes the difference, reduced by any provision for probable adjustments (discounts, returns, allowances, etc.), as Loss on Sale of Receivables.
3. Uses a Receivable from Factor account (reported as a receivable) to account for the proceeds retained by the factor to cover probable sales discounts, sales returns, and sales allowances.

Example 6.13 Sale without Recourse

FACTS Your company (EBC) will sell $500,000 of accounts receivable to Blue Line Factors on a without recourse basis. As part of the agreement, you will transfer the receivable records (sometimes referred to as the invoices) to Blue Line, which will receive the collections. Blue Line assesses a finance charge of 3% of the face amount of the accounts receivable and retains an amount equal to 5% of the accounts receivable (for probable adjustments for sales discounts, and sales returns and allowances).

QUESTION What entry should EBC and Blue Line make to record this transaction?

SOLUTION

This transaction should be recorded like any sale of an asset, because control of the receivables is now with Blue Line. EBC and Blue Line make the following entries.

EBC			Blue Line		
Cash	460,000		Accounts Receivable	500,000	
Receivable from Factor (Blue Line)			Due to Customer (EBC)		25,000
(.05 × $500,000)	25,000		Interest Revenue		15,000
Loss on Sale of Receivables			Cash		460,000
(.03 × $500,000)	15,000				
Accounts Receivable		500,000			

Loss on Sale of Receivables ($15,000) can also be computed as follows.

Carrying (book) value of receivable		$500,000
Less: Cash proceeds	$460,000	
Receivable from factor (Blue Line)	25,000	485,000
Loss on sale of receivables		$ 15,000

Continuing with Example 6.13, note that the Receivable from Factor (Blue Line) account (sometimes referred to as Due from Factor) arises from returns and allowances to EBC customers, whose receivables have been transferred. The factor (EBC) will receive less than the receivable balance from that customer. For example, if EBC accepts a return, it credits the Receivable from Factor account. After the settlement period has concluded, EBC and Blue Line will settle up on the remaining balances, adjusted for returns and allowances; EBC will close out the Receivable from Factor account.

Sale with Recourse Let's look at a different situation. Unfortunately, just before the arrangement between your company (EBC) and Blue Line was signed, Blue Line expressed concern about the collectibility of some of your accounts receivable. As a result, Blue Line indicated that it would not sign the contract unless the receivables were sold on a with recourse basis.

- The with recourse basis means that EBC will have to guarantee payment to Blue Line if any of the accounts receivable sold become uncollectible.
- In other words, you are going to have to recognize a liability related to possible losses on uncollectible accounts.[10]

[10] **Recourse** is the right of a transferee of receivables to receive payment from the transferor of those receivables for (1) failure of the debtors to pay when due, (2) the effects of prepayments, or (3) adjustments resulting from defects in the eligibility of the transferred receivables. [8]

To record this type of transaction, EBC uses a financial component approach because EBC (the seller) has a continuing involvement with the receivable. Under the **financial component approach**, EBC assigns values to the components, such as the recourse provision, servicing rights, and agreement to reacquire. In this approach, each party to the sale only recognizes the assets controlled and the liabilities incurred after the sale.

Example 6.14
Sale with Recourse

FACTS Assume the same information as in Example 6.13, except that EBC sold the receivables on a with recourse basis. You determine that this recourse liability has a fair value of $6,000.

QUESTION How would you determine the loss on sale of the receivables, and what entries would EBC and Blue Line make to record this type of transaction?

SOLUTION

You compute the net proceeds from the sale as follows.

Cash received	$460,000	
Receivable from factor (Blue Line)	25,000	$485,000
Less: Recourse liability		6,000
Net proceeds		$479,000

Net proceeds are cash or other assets received in a sale less any liabilities incurred. The loss is computed as follows.

Carrying (book) value	$500,000
Net proceeds	479,000
Loss on sale of receivables	$ 21,000

The journal entries for EBC and Blue Line for the receivables sold on a recourse basis are as follows.

EBC

Cash	460,000	
Receivable from Factor (Blue Line)	25,000	
Loss on Sale of Receivables	21,000	
Accounts (Notes) Receivable		500,000
Recourse Liability		6,000

Blue Line

Accounts Receivable	500,000	
Due to Customer (EBC)		25,000
Interest Revenue		15,000
Cash		460,000

In this case, EBC recognizes a loss of $21,000. In addition, it records a liability of $6,000 to indicate the probable payment to Blue Line for uncollectible receivables. If Blue Line collects all the receivables, EBC eliminates its recourse liability and increases income. Blue Lines' net income is the interest revenue of $15,000. It will have no bad debts related to these receivables.

You should recognize that there are other reasons to sell receivables, such as the following.

- For competitive reasons, providing sales financing for customers is virtually mandatory in many industries. In the sale of durable goods, such as automobiles, trucks, industrial and farm equipment, computers, and appliances, most sales are on an installment contract basis. Many major companies in these industries have created wholly owned subsidiaries specializing in receivables financing. For example, **Ford** has **Ford Motor Credit**, and **John Deere** has **John Deere Credit**.
- The **holder** may sell receivables because money is tight and access to normal credit is unavailable or too expensive.
- A company may sell its receivables, instead of borrowing, to avoid violating existing lending agreements.
- Billing and collection of receivables are often time-consuming and costly. Credit card companies such as **MasterCard**, **Visa**, **American Express**, **Diners Club**, **Discover**, and others take over the collection process and provide merchants with immediate cash.

Loan As indicated earlier, another possibility for EBC is to borrow money from a financial institution like a bank. To borrow funds, you generally will have to pledge or assign your accounts receivable as collateral for the loan.

- Under a pledge, the assigned receivables remain under control of the borrower.
- If the loan is not paid when due, the lender can convert the collateral to cash.

Borrowers, like EBC, report pledged assets like accounts (notes) receivable no different than any other asset on a balance sheet. Only disclosure is needed to indicate that the accounts receivables are pledged or assigned as collateral on the borrowing. If the fair value of the pledged assets falls below the amount borrowed, EBC will be required to make up the difference or face foreclosure.

Example 6.15
Loan

FACTS EBC borrows $500,000 from Citizens Bank. The general terms of the loan are that EBC will pledge $700,000 of its accounts receivable to Citizens Bank as collateral for the loan. EBC will continue to collect the accounts receivable. Citizens Bank assesses a finance charge of 1% of the accounts receivable and interest on the note at 12%. EBC makes monthly payments to the bank for all cash it collects on the receivables. The specific transactions between EBC and Citizens Bank for 2025 are as follows.

- On March 1, EBC enters into the loan agreement with Citizens Bank.
- During March, EBC decreased Accounts Receivable by $454,000; $14,000 was due to sales returns, and $440,000 was collected less cash discounts of $6,000.
- On April 1, EBC remitted March collections plus accrued interest to the bank.
- During April, EBC collected the balance of accounts receivable less $2,000 written off as uncollectible.
- On May 1, EBC remitted the balance due of $66,000 on the note plus interest on May 1.

QUESTION What entries should EBC and Citizens Bank make for the above transactions?

SOLUTION

EBC			Citizens Bank		
To record issuance of note and finance fee related to loan using accounts receivable as collateral:			**To record issuance of note to EBC:**		
March 1			**March 1**		
Cash	493,000		Notes Receivable	500,000	
Interest Expense (.01 × $700,000)	7,000		Interest Revenue (.01 × $700,000)		7,000
Notes Payable		500,000	Cash		493,000
To reduce accounts receivable for cash received less sales discounts and sales returns and allowances:					
During March			**(No entry)**		
Cash ($440,000 − $6,000)	434,000				
Sales Discounts	6,000				
Sales Returns and Allowances	14,000				
Accounts Receivable		454,000			
To remit March collections plus accrued interest to the bank on April 1:			**To record interest for the month and receive collection on note:**		
April 1			**April 1**		
Interest Expense ($500,000 × .12 × 1/12)	5,000		Cash	439,000	
Notes Payable	434,000		Interest Revenue ($500,000 × .06 × 1/12)		5,000
Cash ($434,000 + $5,000)		439,000	Notes Receivable		434,000
To record collection in April of accounts receivable less $2,000 written off as uncollectible:					
During April			**(No entry)**		
Cash	244,000				
Allowance for Doubtful Accounts	2,000				
Accounts Receivable ($700,000 − $454,000)		246,000			
To remit April collections plus accrued interest to the bank on May 1:			**To record interest for the month and receive collection on note:**		
May 1			**May 1**		
Interest Expense ($66,000 × .12 × 1/12)	660		Cash	66,660	
Notes Payable ($500,000 − $434,000)	66,000		Interest Revenue ($500,000 × .06 × 1/12)		660
Cash		66,660	Notes Receivable		66,660

Is It a Sale or a Borrowing?

Sales of receivables or secured borrowings are typical ways that companies might use their receivables to increase liquidity. You should recognize that a sale of EBC's receivables occurs only if it surrenders control of the receivables to Blue Line. Specifically, for a sale to occur, it must meet three conditions.

1. The receivables have been isolated from EBC (put beyond the reach of EBC and its creditors).
2. Blue Line has the right to pledge or exchange either the receivables or beneficial interest in the receivables.
3. EBC does not maintain effective control over the receivables through an agreement to repurchase or redeem them before maturity.

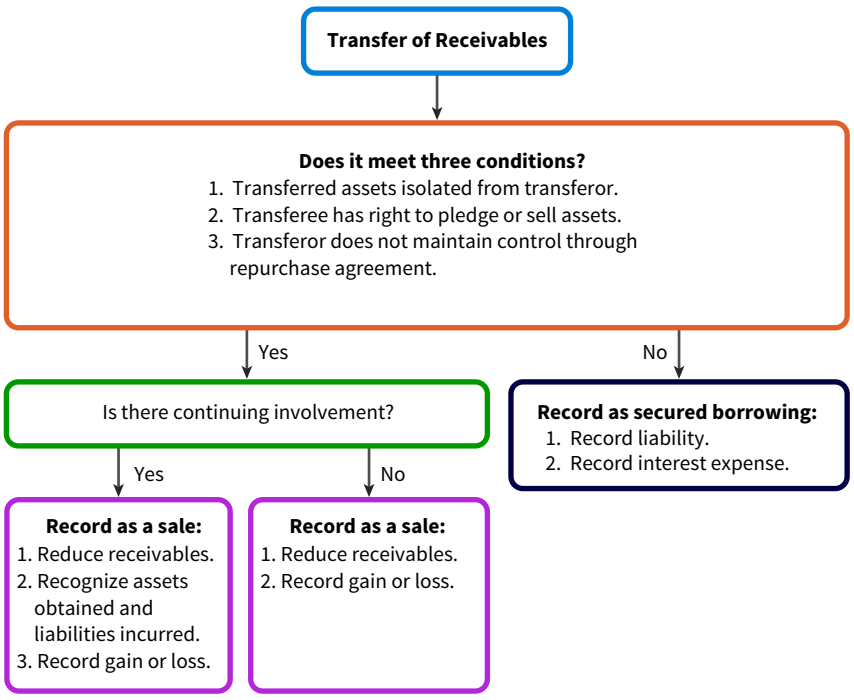
EBC met these conditions in the without recourse situation. However, in the with recourse situation, EBC did not completely isolate itself because it took responsibility for uncollectible accounts. Therefore, it had some continuing involvement but not enough to negate sale accounting. What is enough is somewhat of a judgment call and that is why the FASB developed the three criteria. You should recognize that often companies want sales type accounting here because it often lets them report gains on the sales. In addition, in a sale a liability is not reported. [9]

As shown earlier, we assumed that EBC sold its receivables in both the without and with recourse situation. If the conditions for sale accounting were not met, it then records a liability. The entry in this case is as follows.

Cash	475,000	
Receivable from Factor	25,000	
Notes Payable		500,000

If sale accounting is appropriate, EBC must still consider assets obtained and liabilities incurred in the transaction. Illustration 6.18 shows the rules of accounting for transfers of receivables.

ILLUSTRATION 6.18 Accounting for Transfers of Receivables


Transfer of Receivables
Does it meet three conditions?
1. Transferred assets isolated from transferor.
2. Transferee has right to pledge or sell assets.
3. Transferor does not maintain control through repurchase agreement.
Yes
No
Is there continuing involvement?
Record as secured borrowing:
1. Record liability.
2. Record interest expense.
Yes
No
Record as a sale:
1. Reduce receivables.
2. Recognize assets obtained and liabilities incurred.
3. Record gain or loss.
Record as a sale:
1. Reduce receivables.
2. Record gain or loss.

Accounting Matters — Securitizations—Good or Bad?

Securitization is a popular form of sale (transfer) of receivables. While not new, securitizations got a black eye in the booming mortgage market leading up to the financial crisis of 2008. Securitizations takes place when a lender with a pool of assets, such as mortgage loans, sells shares in these pools of interest and principle payments. As in our examples, factoring usually involves sale to only one company, fees are high, the quality of the receivables is low, and the seller afterward does not service the receivables. In a securitization, many investors are involved, margins are tight, the receivables are of generally higher quality, and the seller usually continues to service the receivables.

Leading up to 2008, interest rates were low and the economy was growing, leading many to consider home ownership. Mortgage lenders granted credit to high-risk (subprime) borrowers and securitized those loans by selling them to investment banks or trusts (special purpose entities) at a gain. That's right—lenders were incentivized to sell pools of subprime mortgages because accounting standards, at the time, allowed them to record a gain. Things came to a screeching halt when interest rates began to rise, the economy slowed, and the subprime borrowers could no longer make their mortgage payments.

The moral of the story is that accounting matters. Lenders had strong incentives to want to report upfront gains on 'sales' of loans. But in most cases, these gains should never have been booked. The FASB has since issued rules to tighten up "gain-on-sale" accounting for securitizations and loan losses. With these rules, lenders have to keep the loans on their balance sheets. Under these conditions, lenders would be much less likely to lend so much money to individuals with poor credit ratings.

As the subprime market mortgage market heats up again, new government regulations, and accounting standards, will hopefully prevent history from repeating itself.

Sources: M. Hudson, "How Wall Street Stoked the Mortgage Meltdown," *Wall Street Journal* (June 27, 2007), p. A10; Associated Press, "Legal Costs Weigh Down US Banks Earnings," *The New York Times* (February 24, 2015); and B. McLannahan and J. Rennison, "U.S. Subprime Mortgage Bonds Back in Fashion," *Financial Times* (March 28, 2018).

Presentation and Decision Analysis

Presentation of Receivables

The general rules in classifying receivables are as follows.

1. Separate the different types of receivables that a company possesses, if material.
2. Appropriately offset the valuation accounts against the proper receivable accounts.
3. Determine that receivables classified in the current assets section will be converted into cash within the year or the operating cycle, whichever is longer.
4. Disclose any loss contingencies that exist on the receivables.
5. Disclose any receivables designated or pledged as collateral.
6. Disclose the nature of credit risk inherent in the receivables, how that risk is analyzed and assessed in arriving at the allowance for credit losses, and the changes and reasons for those changes in the allowance for credit losses.

Presented in **Illustration 6.19** is **PepsiCo**'s balance sheet and disclosure information related to its receivables. The side bars highlight some of the important disclosures related to PepsiCo's receivable balances.

PepsiCo, Inc.
Consolidated Balance Sheet
December 28, 2019
(in millions)

ASSETS	
Current Assets	
Cash and cash equivalents	$ 5,509
Short-term investments	229
Restricted cash	—
Accounts and notes receivable, net	7,822
Inventories	3,338
Prepaid expenses and others current assets	747
Total Current Assets	$17,645

ILLUSTRATION 6.19 Disclosure of Receivables

ILLUSTRATION 6.19 (continued)

Note 2—Our Significant Accounting Policies (in part)

Our products are sold for cash or on credit terms. Our credit terms, which are established in accordance with local and industry practices, typically require payment within 30 days of delivery in the United States and generally within 30 to 90 days internationally, and may allow discounts for early payment.

How allowance is evaluated

We estimate and reserve for our bad debt exposure based on our experience with past due accounts and collectability, write-off history, the aging of accounts receivable and our analysis of customer data. Bad debt expense is classified within selling, general, and administrative expenses on our income statement.

Concentration of credit risk

We are exposed to concentration of credit risk from our major customers, including Walmart. In 2019, sales to Walmart and its affiliates (including Sam's) represented approximately 13% of our consolidated net revenue, including concentrate sales to our independent bottlers, which were used in finished goods sold by them to Walmart. We have not experienced credit issues with these customers.

Note 15 – Supplemental Financial Information

Balance Sheet

	2019	
Accounts and notes receivable		
Trade receivable	$ 6,447	Separate types of receivables
Other receivable	1,480	
Total	7,927	
Allowance, beginning of year	101	Roll-forward of allowance for doubtful accounts
Net amounts charged to expense	22	
Deduction	(30)	
Other	12	
Allowance, end of year	105	
Net receivable	$ 7,822	
Other assets		
Noncurrent notes and accounts receivable	$85	Separation of long-term receivables

Global View

Holding receivables that it will receive in a foreign currency represents risk that the exchange rate may move against the company. This results in a decrease in the amount collected in terms of U.S. dollars. Companies engaged in cross-border transactions often "hedge" these receivables by buying contracts to exchange currencies at specified amounts at future dates. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and U.S. GAAP.*

With respect to additional disclosures, companies are required to disaggregate based on type of receivable. In response to demands for additional information about credit risk, companies must provide the following disclosures about receivables on a disaggregated basis.

1. A roll-forward schedule of the allowance for doubtful accounts from the beginning of the reporting period to the end of the reporting period.
2. The nonaccrual status of receivables by class of receivables. Lenders classify loans as nonaccrual loans when payment is 90 days or more overdue. Because of the overdue status of the receivable, interest is no longer accruing on the outstanding balance.
3. Impaired receivables by type of receivable.

In addition, companies should disclose credit quality indicators and the aging of past due receivables. **[10]**

Companies must disclose concentrations of credit risk for all financial instruments (including receivables). Concentrations of credit risk exist when receivables have common characteristics that may affect their collection. These common characteristics might be companies in the same industry or same region of the country. Financial statement users want to know if a substantial amount of receivables from such sales are to customers facing uncertain economic conditions (see **Global View**). No numerical guidelines are provided as to what is meant by a "concentration of credit risk."[11]

[11]Three items should be disclosed with an identified concentration: (1) information on the characteristic that determines the concentration, (2) the amount of loss that could occur upon nonperformance, and (3) information on any collateral related to the receivable. **[11]**

Accounting Matters — A Foreign Affair

A company like **PepsiCo** is a global organization with sales, and receivables, denominated in foreign currencies. How does this impact the receivables reported in its U.S. GAAP financial statements? At each reporting date, PepsiCo must revalue any foreign receivables to account for any changes in foreign currency exchange rates. As the value of receivables change, PepsiCo must record a gain or loss in other comprehensive income for the period in which the change arises.

This could have a significant impact on a company's results and is worthy of disclosure. Often, companies like PepsiCo will enter into derivative contracts to hedge their foreign currency exchange risk. PepsiCo states, "We are exposed to foreign exchange risks in the international markets in which our products are made, manufactured, distributed or sold... We manage this risk through sourcing purchases from local suppliers, negotiating contracts in local currencies with foreign suppliers and through the use of derivatives. Exchange rate gains or losses related to foreign currency transactions are recognized on our income statement as incurred."

Decision Analysis of Receivables

Accounts Receivable Turnover Analysts frequently compute financial ratios to evaluate the liquidity of a company's accounts receivable. To assess the liquidity of the receivables, they use the **accounts receivable turnover**.

- The accounts receivable turnover measures the number of times, on average, a company collects receivables during the period.
- The ratio is computed by dividing net sales by average (net) accounts receivable outstanding during the year.

Theoretically, the numerator should include only net credit sales, but this information is frequently unavailable. However, if the relative amounts of credit and cash sales remain fairly constant, the trend indicated by the ratio will still be valid. Barring significant seasonal factors, average receivables outstanding can be computed from the beginning and ending balances of net trade receivables.

To illustrate, **Best Buy** reported recent net sales of $39,403 million, its beginning and ending accounts receivable balances were $1,347 million and $1,162 million, respectively. **Illustration 6.20** shows the computation of its accounts receivable turnover.

$$\frac{\text{Net Sales}}{\text{Average Net Accounts Receivable}} = \text{Accounts Receivable Turnover}$$

$$\frac{\$39{,}403}{(\$1{,}347 + \$1{,}162)/2} = 31.4 \text{ times or every } 11.6 \text{ days } (365 \div 31.4)$$

ILLUSTRATION 6.20
Computation of Accounts Receivable Turnover

This information shows how successful the company is in collecting its outstanding receivables (see **Underlying Concepts**). If possible, an aging schedule should also be prepared to help determine how long receivables have been outstanding. A satisfactory accounts receivable turnover may have resulted because certain receivables were collected quickly though others have been outstanding for a relatively long period. An aging schedule would reveal such patterns.

Underlying Concepts

Information that helps users assess a company's current liquidity and prospective cash flows is a primary objective of accounting.

Average Days to Collect Receivables Often the accounts receivable turnover is transformed to **days to collect accounts receivable or days outstanding**—an average collection period. As shown in Illustration 6.20, 365 days is divided by 31.4, resulting in 11.6 days.[12] That is a quick collection period for Best Buy, which is good for cash flow.

- Companies frequently use the average collection period to assess the effectiveness of a company's credit and collection policies.
- The general rule is that the average collection period should not greatly exceed the credit term period.

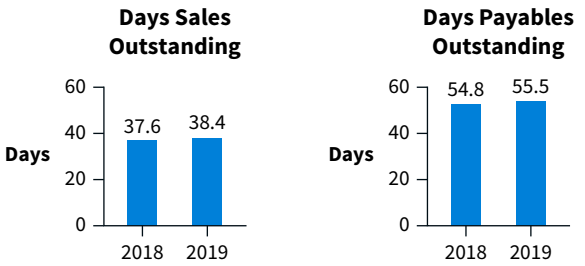
[12]Several figures other than 365 could be used. A common alternative is 360 days because it is divisible by 30 (days) and 12 (months). *Use 365 days in any homework computations.*

For example, if customers are given a 60-day period for payment, then the average collection period should not be too much in excess of 60 days.

Accounting Matters — I'm Still Waiting

Smaller companies many times find themselves in a bind when the economy turns south. Their suppliers demand payment earlier, and their customers (represented by their accounts receivable) take longer to pay. That means companies with the least clout get squeezed the hardest. As one company executive noted, "The slowdown of currency, of money, the exchange, puts us in a very precarious position."

As shown in the adjacent charts, which represent average working capital metrics from the 1,000 largest U.S. public companies, large companies are collecting their own receivables much faster than when they are paying their vendors. For example, **Apple** at one time took 52 days to pay its vendors, up from 43 days a year earlier. As one individual stated, "If you are working with one of these large companies, as your only customer, they have the power. They can go to somebody else, but you can't go anywhere."



Source: CFO/The Hackett Group 2020 Working Capital Scorecard.

Big or small, any company with accounts receivable must use all relevant data to evaluate the collectability of their accounts receivable. With advanced technology and data analytics, those estimates are becoming more complex but hopefully more accurate.

APPENDIX **6A**

Cash Controls

LEARNING OBJECTIVE *6

Explain common techniques employed to control cash.

Cash is the asset most susceptible to improper diversion and use. Management faces two problems in accounting for cash transactions:

1. Establishing proper controls to prevent any unauthorized transactions by officers or employees.
2. Providing information necessary to properly manage cash on hand and cash transactions.

Yet even with sophisticated control devices, errors can and do happen. For example, the *Wall Street Journal* ran a story entitled "A $7.8 Million Error Has a Happy Ending for a Horrified Bank." The story described how **Manufacturers Hanover Trust Co.** mistakenly overpaid about $7.8 million in cash dividends to its stockholders. (As implied in the headline, most stockholders returned the monies.)

To safeguard cash and to ensure the accuracy of the accounting records for cash, companies need effective **internal control** over cash. Provisions of the Sarbanes-Oxley Act call for enhanced efforts to increase the quality of internal control (for cash and other assets). Such efforts are expected to result in improved financial reporting. In this appendix, we discuss some of the basic control issues related to cash.

Using Bank Accounts

To obtain desired control objectives, a company can vary the number and location of banks and the types of bank accounts. For large companies operating in multiple locations, the location of bank accounts can be important. Establishing collection accounts in strategic locations can accelerate the flow of cash into the company by shortening the time between a customer's mailing of a payment and the company's use of the cash.

- Multiple collection centers generally reduce the size of a company's **collection float**.
- This is the difference between the amount on deposit according to the company's records and the amount of collected cash according to the bank record.

Large, multilocation companies frequently use **lockbox accounts** to collect in cities with heavy customer billing.

- The company rents a local post office box and authorizes a local bank to pick up the remittances mailed to that box number.
- The bank empties the box at least once a day and immediately credits the company's account for collections.

The greatest advantage of a lockbox is that it accelerates the availability of collected cash. Generally, in a lockbox arrangement, the bank microfilms the checks for record purposes and provides the company with a deposit slip, a list of collections, and any customer correspondence. Thus, a lockbox system improves the control over cash and accelerates collection of cash. If the income generated from accelerating the receipt of funds exceeds the cost of the lockbox system, then it is a worthwhile undertaking.

The **general checking account** is the principal bank account in most companies and frequently the only bank account in small businesses. A company deposits in and disburses cash from this account. A company routes all transactions through it. For example, a company deposits from and disburses to all other bank accounts through the general checking account.

Companies use **imprest bank accounts** to make a specific amount of cash available for a limited purpose.

- The account acts as a clearing account for a large volume of checks or for a specific type of check.
- To clear a specific and intended amount through the imprest account, a company transfers that amount from the general checking account or other source.

Companies often use imprest bank accounts for disbursing payroll checks, dividends, commissions, bonuses, confidential expenses (e.g., officers' salaries), and travel expenses.

The Imprest Petty Cash System

Almost every company finds it necessary to pay small amounts for miscellaneous expenses such as taxi fares, minor office supplies, and employees' lunches. Disbursements by check for such items is often impractical, yet some control over them is important. A simple method of obtaining reasonable control, while adhering to the rule of disbursement by check, is the **imprest system for petty cash** disbursements. This is how the system works.

1. The company designates a petty cash custodian and gives the custodian a small amount of currency from which to make payments. It records transfer of funds (assume $300) to petty cash as the following.

Petty Cash	300	
Cash		300

2. The petty cash custodian obtains signed receipts from each individual to whom he or she pays cash, attaching evidence of the disbursement to the petty cash receipt. Petty cash transactions are not recorded until the fund is reimbursed; someone other than the petty cash custodian records those entries.
3. When the supply of cash runs low, the custodian presents to the controller or accounts payable cashier a request for reimbursement supported by the petty cash receipts and other disbursement evidence. The custodian receives a company check to replenish the fund. At this point, the company records transactions based on petty cash receipts.

Supplies Expense	42	
Postage Expense	53	
Miscellaneous Expense	76	
Cash Over and Short	2	
Cash		173

4. If the company decides that the amount of cash in the petty cash fund is excessive, it lowers the fund balance as follows.

Cash	50	
Petty Cash		50

5. Conversely, if the company decides to add $100 to the petty cash fund, it increases the fund balance as follows.

Petty Cash	100	
Cash		100

Subsequent to establishment, a company makes entries to the Petty Cash account only to increase or decrease the size of the fund.

A company uses a **Cash Over and Short** account when the petty cash fund fails to prove out. That is, an error occurs such as incorrect change, overpayment of expense, or lost receipt.

- If cash proves out **short** (i.e., the sum of the receipts and cash in the fund is less than the imprest amount), the company debits the shortage to the Cash Over and Short account.
- If cash proves out **over**, it credits the overage to Cash Over and Short.

The company closes Cash Over and Short only at the end of the year. It generally shows Cash Over and Short on the income statement as an "Other expense or revenue."

There are usually expense items in the fund except immediately after reimbursement. Therefore, to maintain accurate financial statements, a company must reimburse the funds at the end of each accounting period and also when nearly depleted.

Under the imprest system, the petty cash custodian is responsible at all times for the amount of the fund on hand either as cash or in the form of signed receipts. These receipts provide the evidence required by the disbursing officer to issue a reimbursement check. Furthermore, a company follows two additional procedures to obtain more complete control over the petty cash fund.

1. A superior of the petty cash custodian makes surprise counts of the fund from time to time to determine that a satisfactory accounting of the fund has occurred.
2. The company cancels or mutilates petty cash receipts after they have been submitted for reimbursement, so that they cannot be used to secure a second reimbursement.

Physical Protection of Cash Balances

Not only must a company safeguard cash receipts and cash disbursements through internal control measures, but it must also protect the cash on hand and in banks. Because receipts become cash on hand and disbursements are made from cash in banks, adequate control of receipts and disbursements is part of the protection of cash balances, along with certain other procedures.

Physical protection of cash is so elementary a necessity that it requires little discussion. A company should make every effort to minimize the cash on hand in the office.

- It should only have on hand a petty cash fund, the current day's receipts, and perhaps funds for making change. Insofar as possible, it should keep these funds in a vault, safe, or locked cash drawer.
- The company should transmit intact each day's receipts to the bank as soon as practicable.
- Accurately stating the amount of available cash both in internal management reports and in external financial statements is also extremely important.

Every company has a record of cash received, disbursed, and the balance. Because of the many cash transactions, however, errors or omissions may occur in keeping this record. Therefore, a company must periodically prove the balance shown in the general ledger. It can count cash actually present in the office—petty cash, change funds, and undeposited receipts—for comparison with the company records. For cash on deposit, a company prepares a bank reconciliation—a reconciliation of the company's record and the bank's record of the company's cash.

Reconciliation of Bank Balances

At the end of each calendar month, the bank supplies each customer with a **bank statement** (a copy of the bank's record of its account with the customer) together with the customer's checks that the bank paid during the month.[13] If neither the bank nor the customer made any errors, if all deposits made and all checks drawn by the customer reached the bank within the same month, and if no unusual transactions occurred that affected either the company's or the bank's record of cash, the balance of cash reported by the bank to the customer equals that shown in the customer's own records. This condition seldom occurs due to one or more of the following reconciling items.

1. **Deposits in transit.** End-of-month deposits of cash recorded on the depositor's books in one month are received and recorded by the bank in the following month.
2. **Outstanding checks.** Checks written by the depositor are recorded when written but may not be recorded by (may not "clear") the bank until the next month.
3. **Bank charges.** Charges recorded by the bank against the depositor's balance for such items as bank services, printing checks, **not-sufficient-funds (NSF) checks**, and safe-deposit box rentals. The depositor may not be aware of these charges until the receipt of the bank statement.
4. **Bank credits.** Collections or deposits by the bank for the benefit of the depositor that may be unknown to the depositor until receipt of the bank statement. Examples are note collection for the depositor and interest earned on interest-bearing checking accounts.
5. **Bank or depositor errors.** Errors on either the part of the bank or the part of the depositor cause the bank balance to disagree with the depositor's book balance.

Hence, a company expects differences between its record of cash and the bank's record. Therefore, it must reconcile the two to determine the nature of the differences between the two amounts. A **bank reconciliation** is a schedule explaining any differences between the bank's and the company's records of cash.

- If the difference results only from transactions not yet recorded by the bank, the company's record of cash is considered correct.
- But, if some part of the difference arises from other items, either the bank or the company must adjust its records.

A company may prepare two forms of a bank reconciliation. One form reconciles from the bank statement balance to the book balance or vice versa. The other form reconciles both the

[13]As we mentioned in this chapter, paper checks continue to be used as a means of payment. However, ready availability of desktop publishing software and hardware has created new opportunities for check fraud in the form of duplicate, altered, and forged checks. At the same time, new fraud-fighting technologies, such as ultraviolet imaging, high-capacity barcodes, and biometrics, are being developed. These technologies convert paper documents into electronically processed document files, thereby reducing the risk of fraud.

bank balance and the book balance to a correct cash balance. Most companies use this latter form. **Illustration 6A.1** shows a sample of that form and its common reconciling items.

ILLUSTRATION 6A.1 Bank Reconciliation Form and Content

Balance per bank statement (end of period)		$$$
Add: Deposits in transit	$$	
Undeposited receipts (cash on hand)	$$	
Bank errors that understate the bank statement balance	$$	$$
		$$$
Deduct: Outstanding checks	$$	
Bank errors that overstate the bank statement balance	$$	$$
Correct cash balance		$$$
Balance per depositor's books		$$$
Add: Bank credits and collections not yet recorded in the books		$$
Book errors that understate the book balance	$$	$$
		$$$
Deduct: Bank charges not yet recorded in the books	$$	
Book errors that overstate the book balance	$$	$$
Correct cash balance		$$$

This form of reconciliation consists of two sections:

1. Balance per bank statement.
2. Balance per depositor's books.

Both sections end with the same "Correct cash balance."

The correct cash balance is the amount to which the books must be adjusted and is the amount reported on the balance sheet. **Companies prepare adjusting journal entries for all the addition and deduction items appearing in the "Balance per depositor's books" section.** Companies should immediately call to the bank's attention any errors attributable to it.

Example 6A.1 Bank Reconciliation

FACTS Nugget Mining Company's books show a cash balance at the Denver National Bank on November 30, 2025, of $20,502. The bank statement covering the month of November shows an ending balance of $22,190. An examination of Nugget's accounting records and November bank statement identified the following reconciling items.

1. A deposit of $3,680 that Nugget mailed November 30 does not appear on the bank statement.
2. Checks written in November but not charged to the November bank statement are:

Check #7327	$ 150
#7348	4,820
#7349	31

3. Nugget has not yet recorded the $600 of interest collected by the bank on November 20 for Sequoia Co. bonds held by the bank for Nugget.
4. Bank service charges of $18 are not yet recorded on Nugget's books.
5. The bank returned one of Nugget's customer's checks for $220 with the bank statement, marked "NSF." The bank treated this bad check as a disbursement.
6. Nugget discovered that it incorrectly recorded check #7322, written in November for $131 in payment of an account payable, as $311.
7. A check for Nugent Oil Co. in the amount of $175 that the bank incorrectly charged to Nugget accompanied the statement.

QUESTION How would you prepare the bank reconciliation, following the template in Illustration 6A.1?

SOLUTION

Nugget reconciled the bank and book balances to the correct cash balance of $21,044 as follows.

Nugget Mining Company
Bank Reconciliation
Denver National Bank, November 30, 2025

Balance per bank statement (end of period)			$22,190
Add: Deposit in transit	(1)	$3,680	
Bank error—incorrect check charged to account by bank	(7)	175	3,855
			26,045
Deduct: Outstanding checks	(2)		5,001
Correct cash balance			$21,044
Balance per books			$20,502
Add: Interest collected by the bank	(3)	$600	
Error in recording check #7322 ($311 − $131)	(6)	180	780
			21,282
Deduct: Bank service charges	(4)	18	
NSF check returned	(5)	220	238
Correct cash balance			$21,044

Example 6A.2 Bank Reconciliation Entries

FACTS Refer to the bank reconciliation in Example 6A.1.

QUESTION What are the required journal entries as a result of Nugget Mining's bank reconciliation?

SOLUTION

The journal entries required to adjust and correct Nugget's books in early December 2025 are taken from the items in the "Balance per books" section and are as follows.

To record interest on Sequoia Co. bonds, collected by bank:		
Cash	600	
Interest Revenue		600
To correct error in recording amount of check #7322:		
Cash	180	
Accounts Payable		180
To record bank service charges for November:		
Office Expense (bank charges)	18	
Cash		18
To record customer's check returned NSF:		
Accounts Receivable	220	
Cash		220

After posting the entries, Nugget's cash account will have a balance of $21,044. Nugget should return the Nugent Oil Co. check to Denver National Bank, informing the bank of the error.

APPENDIX 6B

Collectibility Assessment Based on Expected Cash Flows

LEARNING OBJECTIVE *7

Describe the estimation of the allowance based on expected cash flows.

Companies continually evaluate their receivables to determine their ultimate collectibility. As discussed in the chapter, many companies start with historical loss rates and modify these rates for changes in economic conditions that could affect a borrower's ability to repay the loan. The discussion in the chapter assumed use of this approach to determine the amount of bad debts to be recorded for a period.

Companies commonly evaluate loans (long-term notes receivable) for collectibility based on an analysis of the expected contractual cash flows (principle and interest). They then apply discounted expected cash flow methods (as discussed in Chapter 5) to measure the allowance and to report the loan at the net amount expected to be collected. This approach uses a range of cash flows and incorporates the probabilities of those cash flows to provide a more relevant measurement of present value.

Measurement of Collectibility

The allowance for doubtful accounts and related bad debt expense on a loan or note receivable can be estimated as the difference between the investment in the loan (generally the principal plus accrued interest or amortized cost) and the expected future cash flows discounted at the loan's historical effective-interest rate.[14]

- When using the historical effective loan rate, the value of the investment will change only if some of the legally contracted cash flows are reduced.
- A company recognizes a loss in this case because the expected future cash flows are now lower.
- The company ignores market interest rate changes caused by current economic events that affect the fair value of the loan.

As indicated in the chapter, in estimating future cash flows, the creditor should use reasonable and supportable assumptions and projections.

Example

At December 31, 2024, Ogden Bank recorded an investment of $100,000 in a loan to Carl King. The loan has an historical effective-interest rate of 10%, the principal is due in full at maturity in three years, and interest is due annually. The loan officer performs a review of the loan's expected future cash flows and utilizes the present value method for measuring the collectibility of the loan. Unfortunately, King is experiencing financial difficulty and thinks he will have a difficult time making full payment. **Illustration 6B.1** shows the cash flow schedule prepared by the loan officer; Ogden anticipates that King will pay the full $100,000 principle amount, but only $5,000 in annual interest payments versus the contractual amount of $10,000.

[14]The creditor may also, for the sake of expediency, use the market price of the loan (if such a price is available) or the fair value of the collateral if it is a collateralized loan. **[12]** Note that the collectibility analysis shown in this appendix only applies to credit risk inherent in a loan or receivable. However, if the loans are bundled into a security (e.g., mortgage-backed securities), the impairment test is different. Impairments of securities are measured based on fair value. We discuss this accounting in Chapter 16.

ILLUSTRATION 6B.1
Collectibility Analysis of Loan

Dec. 31	Contractual Cash Flow	Expected Cash Flow	Loss of Cash Flow
2025	$ 10,000	$ 5,000	$ 5,000
2026	10,000	5,000	5,000
2027	110,000	105,000	5,000
Total cash flows	$130,000	$115,000	$15,000

As indicated, this loan is impaired. The expected cash flows of $115,000 are less than the contractual cash flows, including principal and interest, of $130,000. The amount of the impairment to be recorded equals the difference between the recorded investment of $100,000 and the present value of the expected cash flows, as shown in **Illustration 6B.2**.

ILLUSTRATION 6B.2
Computation of Impairment Loss

Recorded investment		$100,000
Less: Present value of $100,000 due in 3 years at 10% (Table 6.2); *FV* (*PVF*$_{3,10\%}$); ($100,000 × .75132)	$75,132	
Present value of $5,000 interest payable annually for 3 years at 10% R (*PVF-OA*$_{3,10\%}$); ($5,000 × 2.48685)	12,434	87,566
Impairment		$ 12,434

Excel Solution

i	10%
n	3
PMT	–$5,000
FV	–$100,000
PV	$87,566

PV(rate, nper, pmt, [fv], [type])

The impairment is $12,434. Why isn't it $15,000 ($130,000 − $115,000)? Because Ogden Bank must measure the loss at a present-value amount, not at an undiscounted amount, when it records the loss.

Recording Bad Debts

Ogden Bank (the creditor) recognizes an impairment of $12,434 by debiting Bad Debt Expense for the expected loss. At the same time, it reduces the overall value of the receivable by crediting Allowance for Doubtful Accounts. The journal entry to record the loss is as follows.[15]

Bad Debt Expense	12,434	
Allowance for Doubtful Accounts		12,434

What entry does Carl King (the debtor) make? The debtor makes no entry because he still legally owes $100,000.

In some cases, debtors like King negotiate a modification in the terms of the loan agreement. In such cases, the accounting entries from Ogden Bank are the same as the situation in which the loan officer must estimate the future cash flows—except that the calculation for the amount of the loss becomes more reliable (because the revised expected cash flow amounts are contractually specified in the loan agreement).[16] The entries related to the debtor in this case often change; they are discussed in Appendix 13A.

[15]In the event of a loan write-off, the company charges the loss against the allowance. In subsequent periods, if revising estimated expected cash flows based on new information, the company adjusts the allowance account and bad debt expense account (either increased or decreased depending on whether conditions improved or worsened) in the same fashion as the original impairment. We use the terms "loss" and "bad debt expense" interchangeably throughout this discussion. Companies should charge losses related to receivables transactions to Bad Debt Expense or the related Allowance for Doubtful Accounts because they use these accounts to recognize changes in values affecting receivables.

[16]Many alternatives are permitted to recognize income by Ogden Bank in subsequent periods. **[13]**

Review and Practice

Key Terms Review

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Learning Objectives Review

1 Indicate how to report cash and related items.

To be reported as "cash," an asset must be readily available for the payment of current obligations and free from contractual restrictions that limit its use in satisfying debts. Cash consists of coin, currency, and available funds on deposit at the bank. Negotiable instruments such as money orders, certified checks, cashier's checks, personal checks, and bank drafts are also viewed as cash. Savings accounts are usually classified as cash.

Companies report cash as a current asset in the balance sheet. The reporting of other related items is as follows.

1. **Restricted cash.** The SEC recommends that companies state separately legally restricted deposits held as compensating balances against short-term borrowing among the "Cash and cash equivalent items" in current assets. Restricted deposits held against long-term borrowing arrangements should be separately classified as noncurrent assets in either the investments or other assets sections.
2. **Bank overdrafts.** Companies should report overdrafts in the current liabilities section and usually add them to the amount reported as accounts payable. If material, these items should be separately disclosed either on the face of the balance sheet or in the related notes.
3. **Cash equivalent.** Companies often report this item together with cash as "Cash and cash equivalents."

2 Define receivables and explain accounting issues related to their recognition.

Receivables are claims held against customers and others for money, goods, or services. The receivables are classified into three types: (1) current or noncurrent, (2) trade or nontrade, and (3) accounts receivable or notes receivable. Two issues that may complicate the measurement of receivables are (1) the availability of discounts (trade and cash discounts), and (2) the length of time between the sale and the payment due dates (the interest element). Ideally, companies should measure receivables in terms of their present value—that is, the discounted value of the cash to be received in the future. The profession specifically excludes from the present value considerations receivables arising from normal business transactions that are due in customary trade terms within approximately one year.

3 Explain accounting issues related to valuation of accounts receivable.

Companies value and report short-term receivables at the net amount expected to be collected, which is not necessarily the amount legally receivable. Determining the net amount expected to be collected requires estimating uncollectible receivables.

4 Explain accounting issues related to recognition and valuation of notes receivable.

Companies record short-term notes at face value and long-term notes receivable at the present value of the cash they expect to collect. When the interest stated on an interest-bearing note equals the effective (market) rate of interest, the note sells at face value. When the stated rate differs from the effective rate, a company records either a discount or premium. Like accounts receivable, companies record and report short-term notes receivable at the net amount expected to be collected. The same is also true of long-term receivables.

5 Explain additional accounting issues related to accounts and notes receivable.

Disposition of accounts and notes receivable. To accelerate the receipt of cash from receivables, the owner may transfer the receivables to another company for cash in one of two ways. (1) **Sales (factoring) of receivables:** Factors are finance companies or banks that buy receivables from businesses and then collect the remittances directly from the customers. In many cases, transferors may have some continuing involvement with the receivable sold. Companies use a financial components approach to record

this type of transaction. (2) **Secured borrowing:** A creditor often requires that the debtor designate or pledge receivables as security for the loan.

Reporting and analyzing receivables. Companies should report receivables with appropriate offset of valuation accounts against receivables, classify receivables as current or noncurrent, identify pledged or designated receivables, and disclose the credit risk inherent in the receivables. Analysts assess receivables based on turnover and the days outstanding.

***6 Explain common techniques employed to control cash.**

The common techniques employed to control cash are as follows. (1) **Using bank accounts.** A company can vary the number and location of banks and the types of accounts to obtain desired control objectives. (2) **The imprest petty cash system**. It may be impractical to require small amounts of various expenses be paid by check, yet some control over them is important. (3) **Physical protection of cash balances**. Adequate control of receipts and disbursements is a part of the protection of cash balances. Every effort should be made to minimize the cash on hand. (4) **Reconciliation of bank balances**. Cash on deposit is not available for count and is proved by preparing a bank reconciliation.

***7 Describe the estimation of the allowance based on expected cash flows.**

Companies commonly evaluate the collectability of loans (long-term notes receivable) based on an analysis of the expected contractual cash flows. The allowance for doubtful accounts and related bad debt expense on a loan or note receivable can be estimated as the difference between the investment in the loan and expected future cash flows discounted at the loan's historical effective-interest rate.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter. *Unless instructed otherwise, round all answers to two decimal places.*

Questions

1. What may be included under the heading of "cash"?
2. In what accounts should the following items be classified?
   - **a.** Coins and currency.
   - **b.** U.S. Treasury (government) bonds.
   - **c.** Certificate of deposit (matures in 5 months).
   - **d.** Cash in a bank that is in receivership.
   - **e.** NSF check (returned with bank statement).
   - **f.** Deposit in foreign bank (exchangeability limited).
   - **g.** Postdated checks.
   - **h.** Cash to be used for retirement of long-term bonds.
   - **i.** Deposits in transit.
   - **j.** 100 shares of **HP** stock (intention is to sell in one year or less).
   - **k.** Savings and checking accounts.
   - **l.** Petty cash.
   - **m.** Stamps.
   - **n.** Travel advances.
3. Define a "compensating balance." How should a compensating balance be reported?
4. Springsteen Inc. reported in a recent annual report "Restricted cash for debt redemption." What section of the balance sheet would report this item?
5. What are the reasons that a company gives trade discounts? Why are trade discounts not recorded in the accounts like cash discounts?
6. What are two methods of recording accounts receivable transactions when a cash discount situation is involved? Which is more theoretically correct? Which is used in practice more of the time? Why?
7. Discuss the accounting for sales allowances and how they relate to the concept of variable consideration.
8. What are the basic problems that occur in the valuation of accounts receivable?
9. What is the theoretical justification of the allowance method as contrasted with the direct write-off method of accounting for bad debts?

10. Indicate how the percentage-of-receivables method, based on an aging schedule, accomplishes the objectives of the allowance method of accounting for bad debts. What other methods, besides an aging analysis, can be used for estimating uncollectible accounts?

11. Of what merit is the contention that the allowance method lacks the objectivity of the direct write-off method? Discuss in terms of accounting's measurement function.

12. Briefly describe the process for recording bad debt expense under the allowance method.

13. Because of calamitous earthquake losses, Bernstein Company, one of your client's oldest and largest customers, suddenly and unexpectedly became bankrupt. Approximately 30% of your client's total sales have been made to Bernstein Company during each of the past several years. The amount due from Bernstein Company—none of which is collectible—equals 22% of total accounts receivable, an amount that is considerably in excess of what was determined to be an adequate provision for doubtful accounts at the close of the preceding year. How would your client record the write-off of the Bernstein Company receivable if it is using the allowance method of accounting for bad debts? Justify your suggested treatment.

14. What is the normal procedure for handling the collection of accounts receivable previously written off using the direct write-off method? The allowance method?

15. On January 1, 2025, Lombard Co. sells land for which it had paid $690,000 to Sargent Company, receiving in return Sargent's zero-interest-bearing note for $1,000,000 payable in 5 years. What entry would Lombard make to record the sale, assuming that Lombard frequently sells similar items of property for a cash sales price of $640,000?

16. What is "imputed interest"? In what situations is it necessary to impute an interest rate for notes receivable? What are the considerations in imputing an appropriate interest rate?

17. Indicate three reasons why a company might sell its receivables to another company.

18. When is the financial components approach to recording the transfers of receivables used? When should a transfer of receivables be recorded as a sale?

19. Moon Hardware is planning to factor some of its receivables. The cash received will be used to pay for inventory purchases. The factor has indicated that it will require "recourse" on the sold receivables. Explain to the controller of Moon Hardware what "recourse" is and how the recourse will be reflected in Moon's financial statements after the sale of the receivables.

20. Horizon Outfitters Company includes in its trial balance for December 31 an item for Accounts Receivable $789,000. This balance consists of the following items.

Due from regular customers	$523,000
Refund receivable on prior year's income taxes (an established claim)	15,500
Travel advance to employees	22,000
Loan to wholly owned subsidiary	45,500
Advances to creditors for goods ordered	61,000
Accounts receivable assigned as security for loans payable	75,000
Notes receivable past due plus interest on these notes	47,000
Total	$789,000

Illustrate how these items should be shown in the balance sheet as of December 31.

21. What is the accounts receivable turnover, and what type of information does it provide?

22. You are evaluating Woodlawn Racetrack for a potential loan. An examination of the notes to the financial statements indicates restricted cash at year-end amounts to $100,000. Explain how you would use this information in evaluating Woodlawn's liquidity.

***23.** Distinguish among the following: (1) a general checking account, (2) an imprest bank account, and (3) a lockbox account.

***24.** What are the general rules for measuring and recognizing gain or loss by both the debtor and the creditor in an impairment?

***25.** Describe the estimation of the allowance, based on expected cash flows.

Brief Exercises

BE6.1 (LO 1) Kraft Enterprises owns the following assets at December 31, 2025.

Cash in bank—savings account	$68,000	Checking account balance	$17,000
Cash on hand	9,300	Postdated checks	750
Cash refund due from IRS	31,400	Certificates of deposit (180-day)	90,000

What amount should be reported as cash?

BE6.2 (LO 2) Restin Co. uses the gross method to record sales made on credit. On June 1, 2025, it made sales of $50,000 with terms 3/15, n/45. On June 12, 2025, Restin received full payment for the June 1 sale. Prepare the required journal entries for Restin Co.

BE6.3 (LO 2) Use the information from BE6.2, assuming Restin Co. uses the net method to account for cash discounts. Prepare the required journal entries for Restin Co.

BE6.4 (LO 2) Roeher Company sold $9,000 of its specialty shelving to Elkins Office Supply Co. on account. Prepare the entries when (a) Roeher makes the sale, (b) Roeher grants an allowance of $700 when some of the shelving does not meet exact specifications but still could be sold by Elkins, and (c) at year-end; Roeher estimates that an additional $200 in allowances will be granted to Elkins.

BE6.5 (LO 3) Wilton, Inc. had net sales in 2025 of $1,400,000. At December 31, 2025, before adjusting entries, the balances in selected accounts were Accounts Receivable $250,000 debit, and Allowance for Doubtful Accounts $2,400 credit. If Wilton estimates that 8% of its receivables will prove to be uncollectible, prepare the December 31, 2025, journal entry to record bad debt expense.

BE6.6 (LO 3) Use the information presented in BE6.5 for Wilton, Inc.

a. Instead of an Allowance for Doubtful Accounts Balance of $2,400 credit, the balance was $1,900 debit. Assume that 10% of accounts receivable will prove to be uncollectible. Prepare the entry to record bad debt expense.

b. Instead of estimating uncollectibles based on a percentage of receivables, assume Wilton prepares an aging schedule that estimates total uncollectible accounts at $24,600. (Assume an allowance of $2,400 credit.) Prepare the entry to record bad debt expense.

BE6.7 (LO 4) Milner Family Importers sold goods to Tung Decorators for $30,000 on November 1, 2025, accepting Tung's $30,000, 6-month, 6% note. Prepare Milner's November 1 entry, December 31 annual adjusting entry, and May 1 entry for the collection of the note and interest.

BE6.8 (LO 4) Dold Acrobats lent $16,529 to Donaldson, Inc., accepting Donaldson's 2-year, $20,000, zero-interest-bearing note. The implied interest rate is 10%. Prepare Dold's journal entries for the initial transaction, recognition of interest each year, and the collection of $20,000 at maturity.

BE6.9 (LO 5) On October 1, 2025, Chung, Inc. assigns $1,000,000 of its accounts receivable to Seneca National Bank as collateral for a $750,000 note. The bank assesses a finance charge of 2% of the receivables assigned and interest on the note of 9%. Prepare the October 1 journal entries for both Chung and Seneca.

BE6.10 (LO 5) Wood Incorporated factored $150,000 of accounts receivable with Engram Factors Inc. on a without-recourse basis. Engram assesses a 2% finance charge of the amount of accounts receivable and retains an amount equal to 6% of accounts receivable for possible adjustments. Prepare the journal entry for Wood Incorporated and Engram Factors to record the factoring of the accounts receivable to Engram.

BE6.11 (LO 5) Use the information in BE6.10 for Wood. Assume that the receivables are sold with recourse. Prepare the journal entry for Wood to record the sale, assuming that the recourse liability has a fair value of $7,500.

BE6.12 (LO 5) Arness Woodcrafters sells $250,000 of receivables to Commercial Factors, Inc. on a with recourse basis. Commercial assesses a finance charge of 5% and retains an amount equal to 4% of accounts receivable. Arness estimates the fair value of the recourse liability to be $8,000. Prepare the journal entry for Arness to record the sale.

BE6.13 (LO 5) Use the information presented in BE6.12 for Arness Woodcrafters but assume that the recourse liability has a fair value of $4,000, instead of $8,000. Prepare the journal entry and discuss the effects of this change in the value of the recourse liability on Arness's financial statements.

BE6.14 (LO 5) Recent financial statements of **General Mills, Inc.** report net sales of $12,442,000,000. Accounts receivable are $912,000,000 at the beginning of the year and $953,000,000 at the end of the year. Compute General Mills' accounts receivable turnover. Compute General Mills' average collection period for accounts receivable in days.

***BE6.15 (LO 6)** Finman Company designated Jill Holland as petty cash custodian and established a petty cash fund of $200. The fund is reimbursed when the cash in the fund is at $15, which it is. Petty cash receipts indicate funds were disbursed for office supplies $94 and miscellaneous expense $87. Prepare journal entries for the establishment of the fund and the reimbursement.

***BE6.16 (LO 6)** Horton Corporation is preparing a bank reconciliation and has identified the following potential reconciling items. For each item, indicate if it is (1) added to balance per bank statement, (2) deducted from balance per bank statement, (3) added to balance per books, or (4) deducted from balance per books.

a. Deposit in transit $5,500.

b. Bank service charges $25.

c. Interest credited to Horton's account $31.

d. Outstanding checks $7,422.

e. NSF check returned $377.

***BE6.17 (LO 6)** Use the information presented in BE6.16 for Horton Corporation. Prepare any entries necessary to make Horton's accounting records correct and complete.

***BE6.18 (LO 7)** Assume that Toni Braxton Company has recently fallen into financial difficulties. By reviewing all available evidence on December 31, 2025, one of Toni Braxton's creditors, the National American Bank, determined that Toni Braxton would pay back only 65% of the principal at maturity. As a result, the bank decided that the loan was impaired. If the loss is estimated to be $225,000, what entry (entries) should National American Bank make to record this loss?

Exercises

E6.1 (LO 1) Excel (Determining Cash Balance) The controller for Clint Eastwood Co. is attempting to determine the amount of cash to be reported on its December 31, 2025, balance sheet. The following information is provided.

1. Commercial savings account of $600,000 and a commercial checking account balance of $900,000 are held at First National Bank of Yojimbo.
2. Money market fund account held at Volonte Co. (a mutual fund organization) permits Eastwood to write checks on this balance, $5,000,000.
3. Travel advances of $180,000 for executive travel for the first quarter of next year (employee to reimburse through salary reduction).
4. A separate cash fund in the amount of $1,500,000 is restricted for the retirement of long-term debt.
5. Petty cash fund of $1,000.
6. An I.O.U. from Marianne Koch, a company customer, in the amount of $190,000.
7. A bank overdraft of $110,000 has occurred at one of the banks the company uses to deposit its cash receipts. At the present time, the company has no deposits at this bank.
8. The company has two certificates of deposit, each totaling $500,000. These CDs have a maturity of 120 days.
9. Eastwood has received a check that is dated January 12, 2026, in the amount of $125,000.
10. Eastwood has agreed to maintain a cash balance of $500,000 at all times at First National Bank of Yojimbo to ensure future credit availability.
11. Eastwood has purchased $2,100,000 of commercial paper of Sergio Leone Co. which is due in 60 days.
12. Currency and coin on hand amounted to $7,700.

Instructions

a. Compute the amount of cash and cash equivalents to be reported on Eastwood Co.'s balance sheet at December 31, 2025.

b. Indicate the proper reporting for items that are not reported as cash and cash equivalents on the December 31, 2025, balance sheet.

E6.2 (LO 1) (Determining Cash Balance) The following are independent situations.

1. Checking account balance $925,000; certificate of deposit $1,400,000; cash advance to subsidiary of $980,000; utility deposit paid to gas company $180.
2. Checking account balance $600,000; an overdraft in special checking account at same bank as normal checking account of $17,000; cash held in a bond sinking fund $200,000; petty cash fund $300; coins and currency on hand $1,350.
3. Checking account balance $590,000; postdated check from customer $11,000; cash restricted due to maintaining compensating balance requirement of $100,000; certified check from customer $9,800; postage stamps on hand $620.
4. Checking account balance at bank $37,000; money market balance at mutual fund (has checking privileges) $48,000; NSF check received from customer $800.
5. Checking account balance $700,000; cash restricted for future plant expansion $500,000; short-term Treasury bills $180,000 (which mature in 6 months); cash advance received from customer $900 (not included in checking account balance); cash advance of $7,000 to company executive, payable on demand; refundable deposit of $26,000 paid to federal government to guarantee performance on construction contract.

Instructions

For each individual situation, determine the amount that should be reported as cash. If the item(s) is not reported as cash, explain the rationale.

E6.3 (LO 2) (Financial Statement Presentation of Receivables) Jim Carrie Company shows a balance of $221,140 in the Accounts Receivable account on December 31, 2025. The balance consists of the following.

Installment accounts due in 2026	$23,000
Installment accounts due after 2026	34,000
Overpayments to vendors	2,640
Due from regular customers, of which $40,000 represents accounts pledged as security for a bank loan	79,000
Advances to employees	1,500
Advance to subsidiary company (due in 2026)	81,000

Instructions

Illustrate how the information above should be shown on the balance sheet of Jim Carrie Company on December 31, 2025.

E6.4 (LO 2) (Determining Ending Accounts Receivable) Your accounts receivable clerk, Mitra Adams, to whom you pay a salary of $1,500 per month, has just purchased a new Acura. You decide to test the accuracy of the accounts receivable balance of $82,000 as shown in the ledger.

The following information is available for your **first year** in business.

1. Collections from customers	$198,000
2. Merchandise purchased	320,000
3. Ending merchandise inventory	90,000
4. Goods are marked to sell at 40% above cost	

Instructions

Compute an estimate of the ending balance of accounts receivable from customers that should appear in the ledger and any apparent shortages. Assume that all sales are made on account.

E6.5 (LO 2) Excel **(Recording Sales Gross and Net)** On June 3, Arnold Company sold to Chester Company merchandise having a sale price of $3,000 with terms of 2/10, n/60, f.o.b. shipping point. An invoice totalling $90, terms n/30, was received by Chester on June 8 from John Booth Transport Service for the freight cost. On June 12, the company received a check for the balance due from Chester Company.

Instructions

a. Prepare journal entries on the Arnold Company books to record all the events noted above under each of the following bases.

1. Sales and receivables are entered at gross selling price.

2. Sales and receivables are entered at net of cash discounts.

b. Prepare the journal entry under basis 2, assuming that Chester Company did not remit payment until July 29.

E6.6 (LO 2) (Recording Sales Transactions) Presented below is information from Perez Computers Incorporated.

July 1	Sold $20,000 of computers to Robertson Company with terms 3/15, n/60. Perez uses the gross method to record cash discounts. Perez estimates allowances of $1,300 will be honored on these sales. (Perez records these estimates at point of sale.)
10	Perez received payment from Robertson for the full amount owed from the July transactions.
17	Sold $200,000 in computers and peripherals to The Clark Store with terms of 2/10, n/30.
30	The Clark Store paid Perez for its purchase of July 17.

Instructions

Prepare the necessary journal entries for Perez Computers.

E6.7 (LO 3) (Recording Bad Debts) Duncan Company reports the following financial information before adjustments.

	Dr.	Cr.
Accounts Receivable	$100,000	
Allowance for Doubtful Accounts		$ 2,000
Sales Revenue (all on credit)		900,000
Sales Returns and Allowances	50,000	

Instructions

Prepare the journal entry to record Bad Debt Expense assuming Duncan Company estimates bad debts at (a) 5% of accounts receivable and (b) 5% of accounts receivable but Allowance for Doubtful Accounts had a $1,500 debit balance.

E6.8 (LO 3) (Recording Bad Debts) At the end of 2025, Aramis Company has accounts receivable of $800,000 and an allowance for doubtful accounts of $40,000. On January 16, 2026, Aramis Company determined that its receivable from Ramirez Company of $6,000 will not be collected, and management authorized its write-off.

Instructions

a. Prepare the journal entry for Aramis Company to write off the Ramirez receivable.

b. What is the net amount expected to be collected of Aramis Company's accounts receivable before the write-off of the Ramirez receivable?

c. What is the net amount expected to be collected of Aramis Company's accounts receivable after the write-off of the Ramirez receivable?

E6.9 (LO 3) (Computing Bad Debts and Preparing Journal Entries) The adjusted trial balance of Taylor Swift Inc. shows the following balances.

	Dr.	Cr.
Accounts Receivable	$90,000	
Allowance for Doubtful Accounts	1,750	
Sales Revenue (all on credit)		$680,000

Instructions

Give the entry for estimated bad debts assuming that the allowance is to provide for doubtful accounts on the basis of (a) 4% of gross accounts receivable and (b) 5% of gross accounts receivable and Allowance for Doubtful Accounts has a $1,700 credit balance.

E6.10 (LO 3) (Bad-Debt Reporting) The chief accountant for Dickinson Corporation provides you with the following list of accounts receivable written off in the current year.

Date	Customer	Amount
March 31	E. L. Masters Company	$7,800
June 30	Stephen Crane Associates	6,700
September 30	Amy Lowell's Dress Shop	7,000
December 31	R. Frost, Inc.	9,830

Dickinson follows the policy of debiting Bad Debt Expense as accounts are written off. The chief accountant maintains that this procedure is appropriate for financial statement purposes because the Internal Revenue Service will not accept other methods for recognizing bad debts.

All of Dickinson's sales are on a 30-day credit basis. Sales for the current year total $2,200,000. The balance in Accounts Receivable at year-end is $77,000 and an analysis of customer risk and charge-off experience indicates that 12% of receivables will be uncollectible (assume a zero balance in the allowance).

Instructions

a. Do you agree or disagree with Dickinson's policy concerning recognition of bad debt expense? Why or why not?

b. By what amount would net income differ if bad debt expense was computed using the percentage-of-receivables approach?

E6.11 (LO 3) (Bad Debts—Aging) Danica Patrick, Inc. includes the following account among its trade receivables.

Hopkins Co.

1/1	Balance forward	700	1/28	Cash (#1710)	1,100
1/20	Invoice #1710	1,100	4/2	Cash (#2116)	1,350
3/14	Invoice #2116	1,350	4/10	Cash (1/1 Balance)	155
4/12	Invoice #2412	1,710	4/30	Cash (#2412)	1,000
9/5	Invoice #3614	490	9/20	Cash (#3614 and	
10/17	Invoice #4912	860		part of #2412)	790
11/18	Invoice #5681	2,000	10/31	Cash (#4912)	860
12/20	Invoice #6347	800	12/1	Cash (#5681)	1,250
			12/29	Cash (#6347)	800

Instructions

Age the balance and specify any items that apparently require particular attention at year-end.

E6.12 (LO 2, 3, 5) (Journalizing Various Receivable Transactions) Presented below is information related to James Garfield Corp., which sells merchandise with terms 2/10, net 60. Garfield records its sales and receivables net.

July 1 James Garfield Corp. sold to Warren Harding Co. merchandise having a sales price of $8,000.
5 Accounts receivable of $9,000 (gross) are factored with Andrew Jackson Credit Corp. without recourse at a financing charge of 9%. Cash is received for the proceeds; collections are handled by the finance company. (These accounts were all past the discount period.)
9 Specific accounts receivable of $9,000 (gross) are pledged to Alf Landon Credit Corp. as security for a loan of $6,000 at a finance charge of 6% of the amount of the loan. The finance company will make the collections. (All the accounts receivable are past the discount period.)
Dec. 29 Warren Harding Co. notifies Garfield that it is bankrupt and will pay only 10% of its account. Give the entry to write off the uncollectible balance using the allowance method. (*Note:* First record the increase in the receivable on July 11 when the discount period passed.)

Instructions

Prepare all necessary entries in general journal form for Garfield Corp.

E6.13 (LO 4) (Note Transactions at Unrealistic Interest Rates) On July 1, 2025, Agincourt Inc. made two sales.

1. It sold land having a fair value of $700,000 in exchange for a 4-year zero-interest-bearing promissory note in the face amount of $1,101,460. The land is carried on Agincourt's books at a cost of $590,000.
2. It rendered services in exchange for a 3%, 8-year promissory note having a face value of $400,000 (interest payable annually).

Agincourt Inc. recently had to pay 8% interest for money that it borrowed from British National Bank. The customers in these two transactions have credit ratings that require them to borrow money at 12% interest.

Instructions

Record the two journal entries that should be recorded by Agincourt Inc. for the sales transactions above that took place on July 1, 2025.

E6.14 (LO 4, 5) (Notes Receivable with Unrealistic Interest Rate) On December 31, 2025, Ed Abbey Co. performed environmental consulting services for Hayduke Co. Hayduke was short of cash, and Abbey Co. agreed to accept a $200,000 zero-interest-bearing note due December 31, 2027, as payment in full. Hayduke is somewhat of a credit risk and typically borrows funds at a rate of 10%. Abbey is much more creditworthy and has various lines of credit at 6%.

Instructions

a. Prepare the journal entry to record the transaction of December 31, 2025, for the Ed Abbey Co.

b. Assuming Ed Abbey Co.'s fiscal year-end is December 31, prepare the journal entry for December 31, 2026.

c. Assuming Ed Abbey Co.'s fiscal year-end is December 31, prepare the journal entry for December 31, 2027.

E6.15 (LO 5) (Assigning Accounts Receivable) On April 1, 2025, Rasheed Company assigns $400,000 of its accounts receivable to the Third National Bank as collateral for a $200,000 loan due July 1, 2025. The assignment agreement calls for Rasheed to continue to collect the receivables. Third National Bank assesses a finance charge of 2% of the accounts receivable, and interest on the loan is 10% (a realistic rate of interest for a note of this type).

Instructions

a. Prepare the April 1, 2025, journal entry for Rasheed Company.

b. Prepare the journal entry for Rasheed's collection of $350,000 of the accounts receivable during the period from April 1, 2025, through June 30, 2025.

c. On July 1, 2025, Rasheed paid Third National all that was due from the loan it secured on April 1, 2025. Prepare the journal entry to record this payment.

E6.16 (LO 2, 3, 5) (Journalizing Various Receivable Transactions) The trial balance before adjustment for Phil Collins Company shows the following balances.

	Dr.	Cr.
Accounts Receivable	$82,000	
Allowance for Doubtful Accounts	2,120	
Sales Revenue		$430,000

Instructions

Using the data above, give the journal entries required to record each of the following cases. (Each situation is independent.)

1. To obtain additional cash, Collins factors without recourse $25,000 of accounts receivable with Stills Finance. The finance charge is 10% of the amount factored.
2. To obtain a 1-year loan of $55,000, Collins pledges $65,000 of specific receivable accounts to Crosby Financial. The finance charge is 8% of the loan; the cash is received and the accounts turned over to Crosby Financial.
3. The company wants to maintain Allowance for Doubtful Accounts at 5% of gross accounts receivable.
4. Based on an aging analysis, an allowance of $5,800 should be reported. Assume the allowance has a credit balance of $1,100.

E6.17 (LO 5) (Transfer of Receivables with Recourse) Ames Quartet Inc. factors receivables with a carrying amount of $200,000 to Joffrey Company for $160,000 on a with recourse basis.

Instructions

The recourse provision has a fair value of $1,000. This transaction should be recorded as a sale. Prepare the appropriate journal entry to record this transaction on the books of Ames Quartet Inc.

E6.18 (LO 5) (Transfer of Receivables with Recourse) Beyoncé Corporation factors $175,000 of accounts receivable with Kathleen Battle Financing, Inc. on a with recourse basis. Kathleen Battle Financing will collect the receivables. The receivables records are transferred to Kathleen Battle Financing on August 15, 2025. Kathleen Battle Financing assesses a finance charge of 2% of the amount of accounts receivable and also reserves an amount equal to 4% of accounts receivable to cover probable adjustments.

Instructions

a. What conditions must be met for a transfer of receivables with recourse to be accounted for as a sale?

b. Assume the conditions from part (a) are met. Prepare the journal entry on August 15, 2025, for Beyoncé to record the sale of receivables, assuming the recourse obligation has a fair value of $2,000.

E6.19 (LO 5) (Transfer of Receivables without Recourse) JFK Corp. factors $300,000 of accounts receivable with LBJ Finance Corporation on a without recourse basis on July 1, 2025. The receivables records are transferred to LBJ Finance, which will receive the collections. LBJ Finance assesses a finance charge of 1½% of the amount of accounts receivable and retains an amount equal to 4% of accounts receivable to cover sales discounts, returns, and allowances. The transaction is to be recorded as a sale.

Instructions

a. Prepare the journal entry on July 1, 2025, for JFK Corp. to record the sale of receivables without recourse.

b. Prepare the journal entry on July 1, 2025, for LBJ Finance Corporation to record the purchase of receivables without recourse.

E6.20 (LO 5) (Analysis of Receivables) Presented below is information for Jones Company.

1. Beginning-of-the-year Accounts Receivable balance was $15,000.
2. Net sales (all on account) for the year were $100,000. Jones does not offer cash discounts.
3. Collections on accounts receivable during the year were $70,000.

Instructions

a. Prepare (summary) journal entries to record the items noted above.

b. Compute Jones's accounts receivable turnover and days to collect receivables for the year. The company does not believe it will have any bad debts.

c. Use the turnover ratio computed in (b) to analyze Jones's liquidity. The turnover ratio last year was 6.0.

E6.21 (LO 5) (Transfer of Receivables) Use the information for Jones Company as presented in E6.20. Jones is planning to factor some accounts receivable at the end of the year. Accounts totaling $25,000 will be transferred to Credit Factors, Inc. with recourse. Credit Factors will retain 5% of the balances for probable adjustments and assesses a finance charge of 4%. The fair value of the recourse obligation is $1,200.

Instructions

a. Prepare the journal entry to record the sale of the receivables.

b. Compute Jones's accounts receivable turnover for the year, assuming the receivables are sold, and discuss how factoring of receivables affects the turnover ratio.

***E6.22 (LO 6) (Petty Cash)** Carolyn Keene, Inc. decided to establish a petty cash fund to help ensure internal control over its small cash expenditures. The following information is available for the month of April.

1. On April 1, it established a petty cash fund in the amount of $200.
2. A summary of the petty cash expenditures made by the petty cash custodian as of April 10, when the balance in petty cash was $27, is as follows.

Delivery charges paid on merchandise purchased	$60.00
Supplies purchased and used	25.00
Postage expense	33.00
I.O.U. from employees	17.00
Miscellaneous expense	36.00

3. The petty cash fund balance was increased $100 to $300 on April 20.

Instructions

Prepare the journal entries to record transactions related to petty cash for the month of April.

*E6.23 (LO 6) **(Petty Cash)** The petty cash fund of Fonzarelli's Auto Repair Service, a sole proprietorship, contains the following.

1.	Coins and currency		$ 15.20
2.	Postage stamps		2.90
3.	An I.O.U. from Richie Cunningham, an employee, for cash advance		40.00
4.	Check payable to Fonzarelli's Auto Repair from Pottsie Weber, an employee, marked NSF		34.00
5.	Vouchers for the following:		
	Postage stamps	$ 20.00	
	Two Rose Bowl tickets for Nick Fonzarelli	170.00	
	Printer cartridge	14.35	204.35
			$296.45

The general ledger account Petty Cash has a balance of $300.

Instructions

Prepare the journal entry to record the reimbursement of the petty cash fund.

*E6.24 (LO 6) **(Bank Reconciliation and Adjusting Entries)** Angela Lansbury Company deposits all receipts and makes all payments by check. The following information is available from the cash records.

June 30 Bank Reconciliation

Balance per bank	$ 7,000
Add: Deposits in transit	1,540
Deduct: Outstanding checks	(2,000)
Balance per books	$ 6,540

Month of July Results

	Per Bank	Per Books
Balance July 31	$8,650	$9,250
July deposits	5,000	5,810
July checks	4,000	3,100
July note collected (not included in July deposits)	1,000	—
July bank service charge	15	—
July NSF check from a customer, returned by the bank (recorded by bank as a charge)	335	—

Instructions

a. Prepare a bank reconciliation going from balance per bank and balance per book to correct cash balance. Outstanding checks from the June reconciliation cleared the bank in July.

b. Prepare the general journal entry or entries to correct the Cash account.

*E6.25 (LO 6) **(Bank Reconciliation and Adjusting Entries)** Logan Bruno Company has just received the August 31, 2025, bank statement, which is summarized below.

County National Bank	Disbursements	Receipts	Balance
Balance, August 1			$ 9,369
Deposits during August		$32,200	41,569
Note collected for depositor, including $40 interest		1,040	42,609
Checks cleared during August	$34,500		8,109
Bank service charges	20		8,089
Balance, August 31			8,089

The general ledger Cash account contained the following entries for the month of August.

Cash			
Balance, August 1	10,050	Disbursements in August	34,903
Receipts during August	35,000		

Deposits in transit at August 31 are $3,800, and checks outstanding at August 31 total $1,050. Cash on hand at August 31 is $310. The bookkeeper improperly entered one check in the books at $146.50 which was written for $164.50 for supplies (expense); it cleared the bank during the month of August.

Instructions

a. Prepare a bank reconciliation dated August 31, 2025, proceeding to a correct balance.

b. Prepare any entries necessary to make the books correct and complete.

c. What amount of cash should be reported in the August 31 balance sheet?

***E6.26 (LO 7) (Expected Cash Flows)** On December 31, 2025, Iva Majoli Company borrowed $62,092 from Paris Bank, signing a 5-year, $100,000 zero-interest-bearing note. The note was issued to yield 10% interest. Unfortunately, during 2027, Majoli began to experience financial difficulty. As a result, at December 31, 2027, Paris Bank determined that it was probable that it would receive back only $75,000 at maturity. The market rate of interest on loans of this nature is now 11%.

Instructions

a. Prepare the entry to record the issuance of the loan by Paris Bank on December 31, 2025.

b. Prepare the entry, if any, to record the impairment of the loan on December 31, 2027, by Paris Bank.

***E6.27 (LO 7) (Expected Cash Flows)** On December 31, 2025, Conchita Martinez Company signed a $1,000,000 note to Sauk City Bank. The market interest rate at that time was 12%. The stated interest rate on the note was 10%, payable annually. The note matures in 5 years. Unfortunately, because of lower sales, Conchita Martinez's financial situation worsened. On December 31, 2027, Sauk City Bank determined that it was probable that the company would pay back only $600,000 of the principal at maturity. However, it was considered likely that interest would continue to be paid, based on the $1,000,000 loan.

Instructions

a. Determine the amount of cash Conchita Martinez received from the loan on December 31, 2025.

b. Prepare a note amortization schedule for Sauk City Bank up to December 31, 2027.

c. Determine the loss on impairment that Sauk City Bank should recognize on December 31, 2027.

Problems

P6.1 (LO 1) Excel (Determine Proper Cash Balance) Francis Equipment Co. closes its books regularly on December 31, but at the end of 2025 it held its cash book open so that a more favorable balance sheet could be prepared for credit purposes. Cash receipts and disbursements for the first 10 days of January were recorded as December transactions. The information is given below.

1. January cash receipts recorded in the December cash book totaled $45,640, of which $28,000 represents cash sales, and $17,640 represents collections on account for which cash discounts of $360 were given.
2. January cash disbursements recorded in the December check register liquidated accounts payable of $22,450 on which discounts of $250 were taken.
3. The ledger has not been closed for 2025.
4. The amount shown as inventory was determined by physical count on December 31, 2025.

The company uses the periodic method of inventory.

Instructions

a. Prepare any entries you consider necessary to correct Francis's accounts at December 31.

b. To what extent was Francis Equipment Co. able to show a more favorable balance sheet at December 31 by holding its cash book open? (Compute working capital and the current ratio.)

Assume that the balance sheet that was prepared by the company showed the following amounts:

	Dr.	Cr.
Cash	$39,000	
Accounts receivable	42,000	
Inventory	67,000	
Accounts payable		$45,000
Other current liabilities		14,200

P6.2 (LO 3) Groupwork (Bad-Debt Reporting) The following are a series of unrelated situations.

1. Halen Company's unadjusted trial balance at December 31, 2025, included the following accounts.

	Debit	Credit
Accounts receivable	$53,000	
Allowance for doubtful accounts	4,000	
Net sales		$1,200,000

Halen Company estimates its bad debt expense to be 7% of gross accounts receivable. Determine its bad debt expense for 2025.

2. An analysis and aging of Stuart Corp. accounts receivable at December 31, 2025, disclosed the following.

Amounts estimated to be uncollectible	$ 180,000
Accounts receivable	1,750,000
Allowance for doubtful accounts (per books)	125,000

What is the net amount expected to be collected of Stuart's receivables at December 31, 2025?

3. Shore Co. provides for doubtful accounts based on 4% of gross accounts receivable. The following data are available for 2025.

Credit sales during 2025	$4,400,000
Bad debt expense	57,000
Allowance for doubtful accounts 1/1/25	17,000
Collection of accounts written off in prior years (customer credit was reestablished)	8,000
Customer accounts written off as uncollectible during 2025	30,000

What is the balance in Allowance for Doubtful Accounts at December 31, 2025?

4. At the end of its first year of operations, December 31, 2025, Darden Inc. reported the following information.

Accounts receivable, net of allowance for doubtful accounts	$950,000
Customer accounts written off as uncollectible during 2025	24,000
Bad debt expense for 2025	84,000

What should be the balance in accounts receivable at December 31, 2025, before subtracting the allowance for doubtful accounts?

5. The following accounts were taken from Bullock Inc.'s trial balance at December 31, 2025.

	Debit	Credit
Net credit sales		$750,000
Allowance for doubtful accounts	$ 14,000	
Accounts receivable	310,000	

If doubtful accounts are 3% of accounts receivable, determine the bad debt expense to be reported for 2020.

Instructions

Answer the questions relating to each of the five independent situations as requested.

P6.3 (LO 3) Excel (Bad-Debt Reporting—Aging) Manilow Corporation operates in an industry that has a high rate of bad debts. Before any year-end adjustments, the balance in Manilow's Accounts Receivable account was $555,000 and Allowance for Doubtful Accounts had a credit balance of $40,000. The year-end balance reported in the balance sheet for Allowance for Doubtful Accounts will be based on the aging schedule shown below.

Days Account Outstanding	Amount	Probability of Collection
Less than 16 days	$300,000	.98
Between 16 and 30 days	100,000	.90
Between 31 and 45 days	80,000	.85
Between 46 and 60 days	40,000	.80
Between 61 and 75 days	20,000	.55
Over 75 days (to be written off)	15,000	.00

Instructions

a. What is the appropriate balance for Allowance for Doubtful Accounts at year-end?

b. Show how accounts receivable would be presented on the balance sheet.

c. What is the dollar effect of the year-end bad debt adjustment on the before-tax income?

(CMA adapted)

P6.4 (LO 3) (Bad-Debt Reporting) From inception of operations to December 31, 2025, Fortner Corporation provided for uncollectible accounts receivable under the allowance method. The provisions are recorded, based on analyses of customers with different risk characteristics. Bad debts written off were charged to the allowance account; recoveries of bad debts previously written off were credited to the allowance account, and no year-end adjustments to the allowance account were made. Fortner's usual credit terms are net 30 days.

The balance in Allowance for Doubtful Accounts was $130,000 (Cr.) at January 1, 2025. During 2025, credit sales totaled $9,000,000, the provision for doubtful accounts was determined to be $180,000, $90,000 of bad debts were written off, and recoveries of accounts previously written off amounted to $15,000. Fortner installed a computer system in November 2025, and an aging of accounts receivable was prepared for the first time as of December 31, 2025. A summary of the aging is as follows.

Classification by Month of Sale	Balance in Each Category	Estimated % Uncollectible
November–December 2025	$1,080,000	2%
July–October	650,000	10%
January–June	420,000	25%
Prior to 1/1/25	150,000	80%
	$2,300,000	

Based on the review of collectibility of the account balances in the "prior to 1/1/25" aging category, additional receivables totaling $60,000 were written off as of December 31, 2025. The 80% uncollectible estimate applies to the remaining $90,000 in the category. Effective with the year ended December 31, 2025, Fortner adopted a different method for estimating the allowance for doubtful accounts at the amount indicated by the year-end aging analysis of accounts receivable.

Instructions

a. Prepare a schedule analyzing the changes in Allowance for Doubtful Accounts for the year ended December 31, 2025. Show supporting computations in good form. (*Hint:* In computing the 12/31/25 allowance, subtract the $60,000 write-off.)

b. Prepare the journal entry for the year-end adjustment to Allowance for Doubtful Accounts balance as of December 31, 2025.

(AICPA adapted)

P6.5 (LO 3) (Bad-Debt Reporting) Presented below is information related to the Accounts Receivable accounts of Gulistan Inc. during the current year 2025.

1. An aging schedule of the accounts receivable as of December 31, 2025, is as follows.

Age	Net Debit Balance	% to Be Applied After Correction Is Made
Under 60 days	$172,342	1%
60–90 days	136,490	3%
91–120 days	39,924*	6%
Over 120 days	23,644	$3,700 definitely uncollectible; estimated
	$372,400	remainder uncollectible is 25%

*The $3,240 write-off of receivables is related to the 91-to-120 day category.

2. The Accounts Receivable control account has a debit balance of $372,400 on December 31, 2025.

3. Two entries were made in the Bad Debt Expense account during the year: (1) a debit on December 31 for the amount credited to Allowance for Doubtful Accounts, and (2) a credit for $3,240 on November 3, 2025, and a debit to Allowance for Doubtful Accounts because of a bankruptcy.

4. Allowance for Doubtful Accounts is as follows for 2025.

Allowance for Doubtful Accounts

Nov. 3	Uncollectible accounts written off	3,240	Jan. 1	Beginning balance	8,750
			Dec. 31	5% of $372,400	18,620

5. A credit balance exists in Accounts Receivable (60–90 days) of $4,840, which represents an advance on a sales contract.

Instructions

Assuming that the books have not been closed for 2025, make the necessary correcting entries.

P6.6 (LO 2, 3) (Journalize Various Accounts Receivable Transactions) The balance sheet of Starsky Company at December 31, 2024, includes the following.

Notes receivable	$ 36,000	
Accounts receivable	182,100	
Less: Allowance for doubtful accounts	17,300	$200,800

Transactions in 2025 include the following.

1. Accounts receivable of $138,000 were collected including accounts of $60,000 on which 2% sales discounts were allowed.
2. $5,300 was received in payment of an account which was written off the books as worthless in 2024.
3. Customer accounts of $17,500 were written off during the year.
4. At year-end, Allowance for Doubtful Accounts was estimated to need a balance of $20,000. This estimate is based on an analysis of aged accounts receivable.

Instructions

Prepare all journal entries necessary to reflect the transactions above.

P6.7 (LO 4) (Notes Receivable with Realistic Interest Rate) On October 1, 2025, Arden Farm Equipment Company sold a pecan-harvesting machine to Valco Brothers Farm, Inc. In lieu of a cash payment, Valco Brothers Farm gave Arden a 2-year, $120,000, 8% note (a realistic rate of interest for a note of this type). The note required interest to be paid annually on October 1. Arden's financial statements are prepared on a calendar-year basis.

Instructions

Assuming Valco Brothers Farm fulfills all the terms of the note, prepare the necessary journal entries for Arden Farm Equipment Company for the entire term of the note.

P6.8 (LO 4) (Notes Receivable Journal Entries) On December 31, 2025, Oakbrook Inc. rendered services to Beghun Corporation at an agreed price of $102,049, accepting $40,000 down and agreeing to accept the balance in four equal installments of $20,000 receivable each December 31. An assumed interest rate of 11% is imputed.

Instructions

Prepare the entries that would be recorded by Oakbrook Inc. for the sale and for the receipts and interest on the following dates (prepare an amortization schedule). (Assume that the effective-interest method is used for amortization purposes.)

a. December 31, 2025. **c.** December 31, 2027. **e.** December 31, 2029.

b. December 31, 2026. **d.** December 31, 2028.

P6.9 (LO 4) (Comprehensive Receivables Problem) Braddock Inc. had the following long-term receivable account balances at December 31, 2024.

Note receivable from sale of division	$1,500,000
Note receivable from officer	400,000

Transactions during 2025 and other information relating to Braddock's long-term receivables were as follows.

1. The $1,500,000 note receivable is dated May 1, 2024, bears interest at 9%, and represents the balance of the consideration received from the sale of Braddock's electronics division to New York Company. Principal payments of $500,000 plus appropriate interest are due on May 1, 2025, 2026, and 2027. The first principal and interest payment were made on May 1, 2025. Collection of the note installments is reasonably assured.
2. The $400,000 note receivable is dated December 31, 2024, bears interest at 8%, and is due on December 31, 2027. The note is due from Sean May, president of Braddock Inc. and is collateralized by 10,000 shares of Braddock's common stock. Interest is payable annually on December 31, and all interest payments were paid on their due dates through December 31, 2025. The quoted market price of Braddock's common stock was $45 per share on December 31, 2025.
3. On April 1, 2025, Braddock sold a patent to Pennsylvania Company in exchange for a $100,000 zero-interest-bearing note due on April 1, 2027. There was no established exchange price for the patent, and the note had no ready market. The prevailing rate of interest for a note of this type at

April 1, 2025, was 12%. The present value of $1 for two periods at 12% is 0.797 (use this factor). The patent had a carrying value of $40,000 at January 1, 2025, and the amortization for the year ended December 31, 2025, would have been $8,000. The collection of the note receivable from Pennsylvania is reasonably assured.

4. On July 1, 2025, Braddock sold a parcel of land to Splinter Company for $200,000 under an installment sale contract. Splinter made a $60,000 cash down payment on July 1, 2025, and signed a 4-year 11% note for the $140,000 balance. The equal annual payments of principal and interest on the note will be $45,125 payable on July 1, 2026, through July 1, 2029. The land could have been sold at an established cash price of $200,000. The cost of the land to Braddock was $150,000. Circumstances are such that the collection of the installments on the note is reasonably assured.

Instructions

a. Prepare the long-term receivables section of Braddock's balance sheet at December 31, 2025.

b. Prepare a schedule showing the current portion of the long-term receivables and accrued interest receivable that would appear in Braddock's balance sheet at December 31, 2025.

c. Prepare a schedule showing interest revenue from the long-term receivables that would appear on Braddock's income statement for the year ended December 31, 2025.

P6.10 (LO 5) (Assigned Accounts Receivable—Journal Entries) Salen Company finances some of its current operations by assigning accounts receivable to a finance company. On July 1, 2025, it assigned, under guarantee (with recourse), specific accounts amounting to $150,000. The finance company advanced to Salen 80% of the accounts assigned (20% of the total to be withheld until the finance company has made its full recovery), less a finance charge of ½% of the total accounts assigned.

On July 31, Salen Company received a statement that the finance company had collected $80,000 of these accounts and had made an additional charge of ½% of the total accounts outstanding as of July 31. This charge is to be deducted at the time of the first remittance due Salen Company from the finance company. (*Hint:* Make entries at this time.) On August 31, 2025, Salen Company received a second statement from the finance company, together with a check for the amount due. The statement indicated that the finance company had collected an additional $50,000 and had made a further charge of ½% of the balance outstanding as of August 31.

Instructions

Make all entries on the books of Salen Company that are involved in the transactions above.

(AICPA adapted)

P6.11 (LO 5) Groupwork (Income Effects of Receivables Transactions) Sandburg Company requires additional cash for its business. Sandburg has decided to use its accounts receivable to raise the additional cash and has asked you to determine the income statement effects of the following contemplated transactions.

1. On July 1, 2025, Sandburg assigned $400,000 of accounts receivable to Keller Finance Company. Sandburg received an advance from Keller of 80% of the assigned accounts receivable less a commission of 3% on the advance. Prior to December 31, 2025, Sandburg collected $220,000 on the assigned accounts receivable, and remitted $232,720 to Keller, $12,720 of which represented interest on the advance from Keller.
2. On December 1, 2025, Sandburg sold $300,000 of net accounts receivable to Wunsch Company for $270,000. The receivables were sold outright on a without recourse basis.
3. On December 31, 2025, an advance of $120,000 was received from First Bank by pledging $160,000 of Sandburg's accounts receivable. Sandburg's first payment to First Bank is due on January 30, 2026.

Instructions

Prepare a schedule showing the income statement effects for the year ended December 31, 2025, as a result of the above facts.

***P6.12 (LO 6) (Petty Cash, Bank Reconciliation)** Bill Jovi is reviewing the cash accounting for Nottleman, Inc., a local mailing service. Jovi's review will focus on the petty cash account and the bank reconciliation for the month ended May 31, 2025. He has collected the following information from Nottleman's bookkeeper for this task.

Petty Cash

1. The petty cash fund was established on May 10, 2025, in the amount of $250.
2. Expenditures from the fund by the custodian as of May 31, 2025, were evidenced by approved receipts for the following.

Postage expense	$33.00
Mailing labels and other supplies	65.00
I.O.U. from employees	30.00
Shipping charges (to customer)	57.45
Newspaper advertising	22.80
Miscellaneous expense	15.35

On May 31, 2025, the petty cash fund was replenished and increased to $300; currency and coin in the fund at that time totaled $26.40.

Bank Reconciliation:

Third National Bank

Bank Statement

	Disbursements	Receipts	Balance
Balance, May 1, 2025			$8,769
Deposits		$28,000	
Note payment direct from customer (interest of $30)		930	
Checks cleared during May	$31,150		
Bank service charges	27		
Balance, May 31, 2025			6,522

Nottleman's Cash Account:

Balance, May 1, 2025	$ 8,850
Deposits during May 2025	31,000
Checks written during May 2025	(31,835)

Deposits in transit are determined to be $3,000, and checks outstanding at May 31 total $850. Cash on hand (besides petty cash) at May 31, 2025, is $246.

Instructions

a. Prepare the journal entries to record the transactions related to the petty cash fund for May.

b. Prepare a bank reconciliation dated May 31, 2025, proceeding to a correct cash balance, and prepare the journal entries necessary to make the books correct and complete.

c. What amount of cash should be reported in the May 31, 2025, balance sheet?

***P6.13 (LO 6) (Bank Reconciliation and Adjusting Entries)** The cash account of Aguilar Co. showed a ledger balance of $3,969.85 on June 30, 2025. The bank statement as of that date showed a balance of $4,150. Upon comparing the statement with the cash records, the following facts were determined.

1. There were bank service charges for June of $25.
2. A bank memo stated that Bao Dai's note for $1,200 and interest of $36 had been collected on June 29, and the bank had made a charge of $5.50 on the collection. (No entry had been made on Aguilar's books when Bao Dai's note was sent to the bank for collection.)
3. Receipts for June 30 for $3,390 were not deposited until July 2.
4. Checks outstanding on June 30 totaled $2,136.05.
5. The bank had charged the Aguilar Co.'s account for a customer's uncollectible check amounting to $253.20 on June 29.
6. A customer's check for $90 (as payment on the customer's Accounts Receivable) had been entered as $60 in the cash receipts journal by Aguilar on June 15.
7. Check no. 742 in the amount of $491 had been entered in the cash journal as $419, and check no. 747 in the amount of $58.20 had been entered as $582. Both checks had been issued to pay for purchases and were payments on Aguilar's Accounts Payable.

Instructions

a. Prepare a bank reconciliation dated June 30, 2025, proceeding to a correct cash balance.

b. Prepare any entries necessary to make the books correct and complete.

***P6.14 (LO 6) (Bank Reconciliation and Adjusting Entries)** Presented below is information related to Haselhof Inc.

Balance per books at October 31, $41,847.85; receipts $173,523.91; disbursements $164,893.54. Balance per bank statement November 30, $56,274.20.

The following checks were outstanding at November 30.

1224	$1,635.29
1230	2,468.30
1232	2,125.15
1233	482.17

Included with the November bank statement and not recorded by the company were a bank debit memo for $27.40 covering bank charges for the month, a debit memo for $372.13 for a customer's check returned and marked NSF, and a credit memo for $1,400 representing bond interest collected by the bank in the name of Haselhof Inc. Cash on hand at November 30 recorded and awaiting deposit amounted to $1,915.40.

Instructions

a. Prepare a bank reconciliation (to the correct balance) at November 30, for Haselhof Inc. from the information above.

b. Prepare any journal entries required to adjust the cash account at November 30.

***P6.15 (LO 7) (Expected Cash Flows)** On January 1, 2025, Botosan Company issued a $1,200,000, 5-year, zero-interest-bearing note to National Organization Bank. The note was issued to yield 8% annual interest. Unfortunately, during 2026 Botosan fell into financial trouble due to increased competition. After reviewing all available evidence on December 31, 2026, National Organization Bank decided that the loan was impaired. Botosan will probably pay back only $800,000 of the principal at maturity.

Instructions

a. Prepare journal entries for both Botosan Company and National Organization Bank to record the issuance of the note on January 1, 2025. (Round to the nearest $10.)

b. Assuming that both Botosan Company and National Organization Bank use the effective-interest method to amortize the discount, prepare the amortization schedule for the note.

c. Under what circumstances can National Organization Bank consider Botosan's note to be impaired?

d. Compute the loss National Organization Bank will suffer from Botosan's financial distress on December 31, 2026. What journal entries should be made to record this loss?

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ6.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. As of June 30, 2020, what balances did P&G have in cash and cash equivalents? What were the major uses of cash during the year?

b. P&G reports no allowance for doubtful accounts, suggesting that bad debt expense is not material for this company. Is it reasonable that a company like P&G would not have material bad debt expense? Explain.

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ6.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What were the cash and cash equivalents reported by Coca-Cola and PepsiCo at the end of 2020? What does each company classify as cash equivalents?

b. What were the accounts receivable (net) for Coca-Cola and PepsiCo at the end of 2020? Which company reports the greater allowance for doubtful accounts (amount and percentage of gross receivable) at the end of 2020? Assume PepsiCo's allowance account relates to trade receivables only.

c. Assuming that all "net operating revenues" (Coca-Cola) and all "net revenues" (PepsiCo) were net **credit** sales, compute the accounts receivable turnover for 2020 for Coca-Cola and PepsiCo; also compute the days outstanding for receivables. What is your evaluation of the difference?

Financial Statement Analysis Case: Occidental Petroleum Corporation

UYJ6.3 **Occidental Petroleum Corporation** reported the following information in a recent annual report.

Occidental Petroleum Corporation
Consolidated Balance Sheets
(in millions)

	Current Year	Prior Year
Current assets		
Cash and cash equivalents	$ 683	$ 146
Trade receivables, net of allowances	804	608
Receivables from joint ventures, partnerships, and other	330	321
Inventories	510	491
Prepaid expenses and other	147	307
Total current assets	2,474	1,873
Long-term receivables, net	264	275

Notes to Consolidated Financial Statements

Cash and Cash Equivalents. Cash equivalents consist of highly liquid investments. Cash equivalents totaled approximately $661 million and $116 million at current and prior year-ends, respectively.

Trade Receivables. Occidental has agreement to sell, under a revolving sale program, an undivided percentage ownership interest in a designated pool of non-interest-bearing receivables. Under this program, Occidental serves as the collection agent with respect to the receivables sold. An interest in new receivables is sold as collections are made from customers. The balance sold at current year-end was $360 million.

Instructions

a. What items other than coin and currency may be included in "cash"?

b. What items may be included in "cash equivalents"?

c. What are compensating balance arrangements, and how should they be reported in financial statements?

d. What are the possible differences between cash equivalents and short-term (temporary) investments?

e. Assuming that the sale agreement meets the criteria for sale accounting, cash proceeds were $345 million, the carrying value of the receivables sold was $360 million, and the fair value of the recourse liability was $15 million, what was the effect on income from the sale of receivables?

f. Briefly discuss the impact of the transaction in (e) on Occidental's liquidity.

Financial Statement Analysis Case: Microsoft

UYJ6.4 **Microsoft** is the leading developer of software in the world. To continue to be successful Microsoft must generate new products, which requires significant amounts of cash. The following is the current asset and current liability information from Microsoft's recent balance sheets (in millions). Following the Microsoft data is the current asset and current liability information from **Oracle**'s balance sheets of the same year (in millions). Oracle is another major software developer.

Microsoft Corporation
Balance Sheets (partial)
As of June 30 (in millions)

	Current Year	Prior Year
Current assets		
Cash and cash equivalents	$ 13,576	$ 11,356
Short-term investments	122,951	122,463
Accounts receivable, net	32,011	29,524
Inventories	1,895	2,063
Other	11,482	10,146
Total current assets	$181,915	$175,552
Total current liabilities	$ 72,310	$106,132

Oracle
Balance Sheets (partial)
As of May 31 (in millions)

	Current Year	Prior Year
Current assets		
Cash and cash equivalents	$37,239	$20,514
Marketable securities	5,818	17,313
Accounts receivable, net	5,551	5,134
Other current assets	3,532	3,425
Total current assets	$52,140	$46,386
Total current liabilities	$17,200	$18,630

Part 1 (Cash and Cash Equivalents)

Instructions

a. What is the definition of a cash equivalent? Give some examples of cash equivalents. How do cash equivalents differ from other types of short-term investments?

b. Calculate (1) the current ratio and (2) working capital for each company for the current year and discuss your results.

c. Is it possible to have too many liquid assets?

Part 2 (Accounts Receivable) Microsoft provided the following disclosure related to its accounts receivable.

Allowance for Doubtful Accounts. The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on known troubled accounts, historical experience, and other currently available evidence. Activity in the allowance for doubtful accounts is as follows:

(in millions)

Year Ended June 30	Balance at Beginning of Period	Charged to Costs and Expenses	Write-Offs	Balance at End of Period
Two years ago	$361	$134	$ (98)	$397
Prior year	397	153	(116)	434
Current year	434	560	(178)	816

Instructions

a. Compute Microsoft's accounts receivable turnover for the current year and discuss your results. Microsoft had sales revenue of $143,015 million in the current year.

b. Reconstruct the summary journal entries for current year based on the information in the disclosure.

c. Briefly discuss how the accounting for bad debts affects the analysis in Part 2 (a).

Accounting, Analysis, and Principles

UYJ6.5 The Flatiron Pub provides catering services to local businesses. The following information was available for The Flatiron Pub for the years ended December 31, 2024 and 2025.

	December 31, 2024	December 31, 2025
Cash	$ 2,000	$ 1,685
Accounts receivable	46,000	?
Allowance for doubtful accounts	550	?
Other current assets	8,500	7,925
Current liabilities	37,000	44,600
Total credit sales	205,000	255,000
Collections on accounts receivable	190,000	228,000

Flatiron management is preparing for a meeting with its bank concerning renewal of a loan and has collected the following information related to the above balances.

1. The cash reported at December 31, 2025, reflects the following items: petty cash $1,575 and postage stamps $110. The other current assets balance at December 31, 2025, includes the checking account balance of $4,000.
2. On November 30, 2025, Flatiron agreed to accept a 6-month, $5,000 note bearing 12% interest, payable at maturity, from a major client in settlement of a $5,000 bill. The above balances do not reflect this transaction.

3. Flatiron factored some accounts receivable at the end of 2025. It transferred accounts totaling $10,000 to Final Factor, Inc. with recourse. Final Factor will receive the collections from Flatiron's customers and will retain 2% of the balances. Final Factor assesses Flatiron a finance charge of 3% on this transfer. The fair value of the recourse liability is $400. However, management has determined that the amount due from the factor and the fair value of the resource obligation have not been recorded, and neither are included in the balances above.
4. Flatiron charged off uncollectible accounts with balances of $1,600. On the basis of the latest available information, the 2025 provision for bad debts is based on uncollectibles being 2.5% of accounts receivable.

Accounting

a. Based on the above transactions, determine the balance for (1) Accounts Receivable and (2) Allowance for Doubtful Accounts at December 31, 2025.

b. Prepare the current assets section of The Flatiron Pub's balance sheet at December 31, 2025.

Analysis

a. Compute Flatiron's current ratio and accounts receivable turnover for December 31, 2025. Use these measures to analyze Flatiron's liquidity. The accounts receivable turnover in 2024 was 4.37.

b. Discuss how the analysis you did above of Flatiron's liquidity would be affected if Flatiron had transferred the receivables in a secured borrowing transaction.

Principles

What is the conceptual basis for recording bad debt expense based on the percentage-of-receivables approach at December 31, 2025?

Developing Your Professional Skills

Critical-Thinking Cases

CT6.1 (LO 3) (Bad-Debt Accounting) Simms Company has significant amounts of trade accounts receivable. Simms uses the allowance method to estimate bad debts instead of the direct write-off method. During the year, some specific accounts were written off as uncollectible, and some that were previously written off as uncollectible were collected.

Instructions

a. What are the deficiencies of the direct write-off method?

b. Briefly describe the allowance method to estimate bad debts and the theoretical justification for its use?

c. How should Simms account for the collection of the specific accounts previously written off as uncollectible?

CT6.2 (LO 2, 5) (Various Receivable Accounting Issues) Kimmel Company uses the net method of accounting for sales discounts. Kimmel also offers trade discounts to various groups of buyers. On August 1, 2025, Kimmel sold some accounts receivable on a without recourse basis. Kimmel incurred a finance charge. Kimmel also has some notes receivable bearing an appropriate rate of interest. The principal and total interest are due at maturity. The notes were received on October 1, 2025, and mature on September 30, 2027. Kimmel's operating cycle is less than one year.

Instructions

a. 1. Using the net method, how should Kimmel account for the sales discounts at the date of sale? What is the rationale for the amount recorded as sales under the net method?

2. Using the net method, what is the effect on Kimmel's sales revenues and net income when customers do not take the sales discounts?

b. What is the effect of trade discounts on sales revenues and accounts receivable? Why?

c. How should Kimmel account for the accounts receivable factored on August 1, 2025? Why?

d. How should Kimmel account for the note receivable and the related interest on December 31, 2025? Why?

CT6.3 (LO 3) Writing (Bad-Debt Reporting Issues) Clark Pierce conducts a wholesale merchandising business that sells approximately 5,000 items per month with a total monthly average sales value of $250,000. Its annual bad debt rate has been approximately 1½% of sales. In recent discussions with his bookkeeper, Mr. Pierce has become confused by all the alternatives apparently available in handling the Allowance for Doubtful Accounts balance. The following information has been presented to Pierce.

1. An allowance can be set up (a) on the basis of a percentage of receivables or (b) on the basis of a valuation of all past due or otherwise questionable accounts receivable. Those considered uncollectible can be charged to such allowance at the close of the accounting period, or specific items can be charged off directly against (1) Gross Sales or to (2) Bad Debt Expense in the year in which they are determined to be uncollectible.
2. Collection agency and legal fees, and so on, incurred in connection with the attempted recovery of bad debts can be charged to (a) Bad Debt Expense, (b) Allowance for Doubtful Accounts, (c) Legal Expense, or (d) Administrative Expense.
3. Debts previously written off in whole or in part but currently recovered can be credited to (a) Other Revenue, (b) Bad Debt Expense, or (c) Allowance for Doubtful Accounts.

Instructions

Which of the foregoing methods would you recommend to Mr. Pierce in regard to (1) allowances and charge-offs, (2) collection expenses, and (3) recoveries? State briefly and clearly the reasons supporting your recommendations.

CT6.4 (LO 2, 4) Writing (Basic Note and Accounts Receivable Transactions)

Part 1: On July 1, 2025, Wallace Company, a calendar-year company, sold special-order merchandise on credit and received in return an interest-bearing note receivable from the customer. Wallace Company will receive interest at the prevailing rate for a note of this type. Both the principal and interest are due in one lump sum on June 30, 2026.

Instructions

When should Wallace Company report interest revenue from the note receivable? Discuss the rationale for your answer.

Part 2: On December 31, 2025, Wallace Company had significant amounts of accounts receivable as a result of credit sales to its customers. Wallace uses the allowance method based on credit sales to estimate bad debts. Past experience indicates a reliable estimate of uncollectible accounts can be developed based on an aging analysis of receivable balances. This pattern is expected to continue.

Instructions

a. Discuss the rationale for using the allowance method based on the balance in the trade receivables accounts.

b. How should Wallace Company report the allowance for doubtful accounts on its balance sheet at December 31, 2025? Also, describe the alternatives, if any, for presentation of bad debt expense in Wallace Company's 2025 income statement.

(AICPA adapted)

CT6.5 (LO 5) (Sale of Notes Receivable) Corrs Wholesalers Co. sells industrial equipment in exchange for a standard 3-year note receivable. Revenue is recognized at time of sale. Each note is secured by a lien on the equipment and has a face amount equal to the equipment's list price. Each note's stated interest rate is below the customer's market rate at date of sale. All notes are to be collected in three equal annual installments beginning one year after sale. Some of the notes are subsequently sold to a bank with recourse, some are subsequently sold without recourse, and some are retained by Corrs. At year-end, Corrs evaluates all outstanding notes receivable and provides for estimated losses arising from defaults.

Instructions

a. What is the appropriate valuation basis for Corrs's notes receivable at the date it sells equipment?

b. How should Corrs account for the sale, without recourse, of a February 1, 2025, note receivable sold on May 1, 2025? Why is it appropriate to account for it in this way?

c. At December 31, 2025, how should Corrs measure and account for the impact of estimated losses resulting from notes receivable that it:

1. Retained and did **not** sell?
2. Sold to bank with recourse?

(AICPA adapted)

CT6.6 (LO 4) (Zero-Interest-Bearing Note Receivable) On September 30, 2024, Rolen Machinery Co. sold a machine and accepted the customer's zero-interest-bearing note. Rolen normally makes sales on a cash basis. Since the machine was unique, its sales price was not determinable using Rolen's normal pricing practices.

After receiving the first of two equal annual installments on September 30, 2025, Rolen immediately sold the note with recourse. On October 9, 2026, Rolen received notice that the note was dishonored, and it paid all amounts due. At all times prior to default, the note was reasonably expected to be paid in full.

Instructions

a. **1.** How should Rolen determine the sales price of the machine?

2. How should Rolen report the effects of the zero-interest-bearing note on its income statement for the year ended December 31, 2024? Why is this accounting presentation appropriate?

b. What are the effects of the sale of the note receivable with recourse on Rolen's income statement for the year ended December 31, 2025, and its balance sheet at December 31, 2025?

c. How should Rolen account for the effects of the note being dishonored?

CT6.7 (LO 4, 5) Groupwork (Reporting of Notes Receivable, Interest, and Sale of Receivables) On July 1, 2025, Moresan Company sold special-order merchandise on credit and received in return an interest-bearing note receivable from the customer. Moresan will receive interest at the prevailing rate for a note of this type. Both the principal and interest are due in one lump sum on June 30, 2026.

On September 1, 2025, Moresan sold special-order merchandise on credit and received in return a zero-interest-bearing note receivable from the customer. The prevailing rate of interest for a note of this type is determinable. The note receivable is due in one lump sum on August 31, 2027.

Moresan also has significant amounts of trade accounts receivable as a result of credit sales to its customers. On October 1, 2025, some trade accounts receivable were assigned to Indigo Finance Company on a non-notification basis (Moresan handles collections) for an advance of 75% of their amount at an interest charge of 8% on the balance outstanding.

On November 1, 2025, other trade accounts receivable were sold on a without recourse basis. The factor withheld 5% of the trade accounts receivable factored as protection against sales returns and allowances and charged a finance charge of 3%.

Instructions

a. How should Moresan determine the interest revenue for 2025 on the:

1. Interest-bearing note receivable? Why?

2. Zero-interest-bearing note receivable? Why?

b. How should Moresan report the interest-bearing note receivable and the zero-interest-bearing note receivable on its balance sheet at December 31, 2025?

c. How should Moresan account for subsequent collections on the trade accounts receivable assigned on October 1, 2025, and the payments to Indigo Finance? Why?

d. How should Moresan account for the trade accounts receivable factored on November 1, 2025? Why? (AICPA adapted)

CT6.8 (LO 4) Writing (Accounting for Zero-Interest-Bearing Note) Soon after beginning the year-end audit work on March 10 at Engone Company, the auditor has the following conversation with the controller.

Controller: The year ended March 31 should be our most profitable in history and, as a consequence, the board of directors has just awarded the officers generous bonuses.

Auditor: I thought profits were down this year in the industry, according to your latest interim report.

Controller: Well, they were down, but 10 days ago we closed a deal that will give us a substantial increase for the year.

Auditor: Oh, what was it?

Controller: Well, you remember a few years ago our former president bought stock in Henderson Enterprises because he had those grandiose ideas about becoming a conglomerate. For 6 years we have not been able to sell this stock, which cost us $3,000,000 and has not paid a nickel in dividends. Thursday we sold this stock to Bimini Inc. for $4,000,000. So, we will have a gain of $700,000 ($1,000,000 pretax) which will increase our net income for the year to $4,000,000, compared with last year's $3,800,000. As far as I know, we'll be the only company in the industry to register an increase in net income this year. That should help the market value of the stock!

Auditor: Do you expect to receive the $4,000,000 in cash by March 31, your fiscal year-end?
Controller: No. Although Bimini Inc. is an excellent company, they are a little tight for cash because of their rapid growth. Consequently, they are going to give us a $4,000,000 zero-interest-bearing note with payments of $400,000 per year for the next 10 years. The first payment is due on March 31 of next year.
Auditor: Why is the note zero-interest-bearing?
Controller: Because that's what everybody agreed to. Since we don't have any interest-bearing debt, the funds invested in the note do not cost us anything and besides, we were not getting any dividends on the Henderson Enterprises stock.

Instructions

Do you agree with the way the controller has accounted for the transaction? If not, how should the transaction be accounted for?

CT6.9 (LO 2, 3) Writing (Receivables Management) As the manager of the accounts receivable department for Beavis Leather Goods, Ltd., you recently noticed that Kelly Collins, your accounts receivable clerk who is paid $2,500 per month, has been wearing unusually tasteful and expensive clothing. (This is Beavis's first year in business.) This morning, Collins drove up to work in a brand new Lexus.

Naturally suspicious by nature, you decide to test the accuracy of the accounts receivable balance of $192,000 as shown in the ledger. The following information is available for your first year (precisely 9 months ended September 30, 2025) in business.

1.	Collections from customers	$188,000
2.	Merchandise purchased	360,000
3.	Ending merchandise inventory	90,000
4.	Goods are marked to sell at 40% above cost.	

Instructions

Assuming all sales were made on account, compute the ending accounts receivable balance that should appear in the ledger, noting any apparent shortage. Then, draft a memo dated October 3, 2025, to Mark Price, the branch manager, explaining the facts in this situation. Remember that this problem is serious, and you do not want to make hasty accusations.

CT6.10 (LO 3) Ethics (Bad-Debt Reporting) Marvin Company is a subsidiary of Hughes Corp. The controller believes that the yearly allowance for doubtful accounts for Marvin should be 8% of gross accounts receivable. Given the recession and the high interest rate environment, the president, nervous that the parent company might expect the subsidiary to sustain its 10% growth rate, suggests that the controller increase the allowance for doubtful accounts to 9%. The president thinks that the lower net income, which reflects a 6% growth rate, will be a more sustainable rate for Marvin Company.

Instructions

a. In a recessionary environment with tight credit and high interest rates:
  1. Identify steps Marvin Company might consider to improve the accounts receivable situation.
  2. Then evaluate each step identified in terms of the risks and costs involved.

b. Should the controller be concerned with Marvin Company's growth rate in estimating the allowance? Explain your answer.

c. Does the president's request pose an ethical dilemma for the controller? Give your reasons.

FASB Codification References

[1] FASB ASC 210-10-S99-1. [Predecessor literature: "Amendments to Regulations S-X and Related Interpretations and Guidelines Regarding the Disclosure of Compensating Balances and Short-Term Borrowing Arrangements," *Accounting Series Release No. 148*, Securities and Exchange Commission (November 13, 1973).]
[2] FASB ASC 606-10-32-2 to 4. [Predecessor literature: None.]
[3] FASB ASC 606-10. [Predecessor literature: None.]
[4] FASB ASC 835-30-15-3. [Predecessor literature: "Interest on Receivables and Payables," *Opinions of the Accounting Principles Board No. 21* (New York: AICPA, 1971), par. 3(a).]
[5] FASB ASC 825-15-25-3 [Predecessor literature: None.]
[6] FASB ASC 825-15-55-2 [Predecessor literature: None.]

[7] FASB ASC 835-30-05. [Predecessor literature: "Interest on Receivables and Payables," *Opinions of the Accounting Principles Board No. 21* (New York: AICPA, 1971), par. 3(a).]
[8] FASB ASC 860-40 and FASB ASC 860-10-5-15. [Predecessor literature: "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities," *Statement of Financial Accounting Standards No. 140* (Stamford, Conn.: FASB, 2000), p. 155.]
[9] FASB ASC 860. [Predecessor literature: "Transfers and Servicing," *Accounting Standards Update 2011–03* (April 2011).]
[10] FASB ASC 310-10-50 and 825-15-50. [Predecessor literature: None.]
[11] FASB ASC 825-10-50-20 through 22. [Predecessor literature: "Disclosures about Fair Value of Financial Instruments," *Statement of Financial Accounting Standards No. 107* (Norwalk, Conn.: FASB, 1991), par. 15.]
[12] FASB ASC 825-15-55-6. [Predecessor literature: "Accounting by Creditors for Impairment of a Loan," *FASB Statement No. 114* (Norwalk, Conn.: FASB, May 1993), par. 13.]
[13] FASB ASC 825-15-25-8. [Predecessor literature: "Accounting by Creditors for Impairment of a Loan—Income Recognition and Disclosures," *FASB Statement No. 118* (Norwalk, Conn.: FASB, October 1994).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE6.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of cash?

b. What is the definition of securitization?

c. What are the three contexts that give rise to recourse?

CE6.2 Carrie Underwood believes that by establishing an allowance for uncollectible receivables, a company recognizes losses that have occurred in the past. What does the authoritative literature say about this belief?

CE6.3 In addition to securitizations, what are the other types of transfers of financial assets identified in the Codification?

CE6.4 The controller for Nesheim Construction Company believes that it is appropriate to offset a note payable to Oregon Bank against an account receivable from Oregon Bank related to remodeling services provided to the bank. What is the authoritative guidance concerning the criteria to be met to allow such offsetting?

Codification Research Case

As the new staff person in your company's treasury department, you have been asked to conduct research related to a proposed transfer of receivables. Your supervisor wants the authoritative sources for the following items that are discussed in the securitization agreement.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify relevant Codification section that addresses transfers of receivables.

b. Provide definitions for the following:

1. Transfer.

2. Recourse.

3. Collateral.

Additional Professional Resources

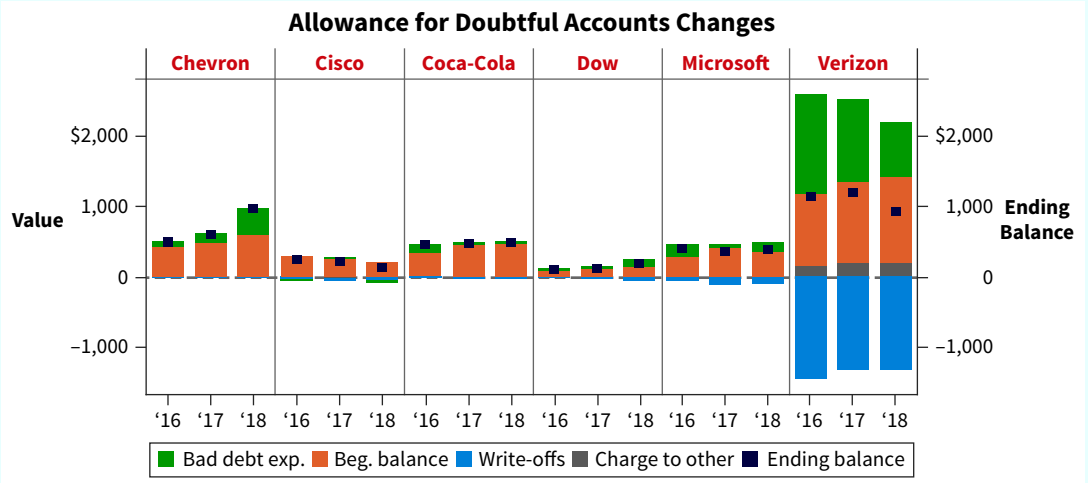
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Estimate Allowance for Doubtful Accounts

DA6.1 Estimates are an inherent part of financial reporting, and many of the largest line items on a company's balance sheet and income statement are directly impacted by estimates. For example, consider uncollectible accounts. Companies must estimate their allowance for doubtful accounts at each balance sheet date, which directly impacts the amount of bad debt expense reported on the income statement.

Using data visualizations like the following graph can help managers to identify trends and understand correlations among financial statement data, which in turn can lead to more accurate estimation of their bad debts.



Required

For this exercise, you will use a dashboard of visualizations related to bad debts to answer questions about how effective certain companies are at estimating their allowance for doubtful accounts.

Go to Wiley Course Resources for complete details and instructions.

DA6.2 Benchmarking financial metrics against similar companies in the same industry can help refine estimates and also provide insights on any company-specific activities that could lead to variations from the benchmark data.

Required

Using the visualization dashboard from DA6.1, you will review a variety of metrics related to allowance for doubtful accounts for several public companies and document what conclusions you can draw from the data.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Evaluate Estimates

Excel

DA6.3 If estimates are inherently uncertain, how can we evaluate the accuracy of a company's estimates? However, by using data analytics and some tools in Excel, we can evaluate the reasonableness of estimates included in a company's financial statements.

Required

In this exercise, you will read about different techniques for analyzing estimates of uncollectible receivables. Each technique compares different financial metrics, such as cumulative bad deb expense to bad debt write-offs over the same period, and provides a general benchmark for the result. Using financial data from public companies, you will use Excel to calculate various metrics related to bad debts and create charts to help draw conclusions from the data.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 8

Compare the accounting procedures for cash and receivables under GAAP and IFRS.

The basic accounting and reporting issues related to recognition and measurement of receivables, such as the use of allowance accounts, how to record discounts, use of the allowance method to account for bad debts, and factoring, are similar for both IFRS and GAAP. *IAS 1* ("Presentation of Financial Statements") is the only standard that discusses issues specifically related to cash. *IFRS 7* ("Financial Instruments: Disclosure") and *IFRS 9* ("Financial Instruments") are the two international standards that address issues related to financial instruments and more specifically receivables.

Following are the key similarities and differences between GAAP and IFRS related to cash and receivables.

Similarities

- The accounting and reporting related to cash is essentially the same under both IFRS and GAAP. In addition, the definition used for cash equivalents is the same.
- Like GAAP, cash and receivables are generally reported in the current assets section of the statement of financial position under IFRS.
- Like GAAP, for trade and other accounts receivable without a significant financing component, an allowance for uncollectible accounts should be recorded to result in receivables reported at the net amount expected to be collected. The estimation approach used is similar to that under GAAP.
- Similar to GAAP, IFRS requires that loans and receivables be accounted for at amortized cost, adjusted for allowances for doubtful accounts. IFRS sometimes refers to these allowances as *provisions*. The entry to record the allowance would be as follows.

Bad Debt Expense	xxxxxx	
Provision for Doubtful Accounts		xxxxxx

Differences

- Under IFRS, companies may report cash and receivables as the last items in current assets under IFRS. Under GAAP, these items are reported in order of liquidity.
- While IFRS implies that receivables with different characteristics should be reported separately, there is no standard that mandates this segregation. GAAP has explicit guidance in the area.
- Unlike GAAP, IFRS has a different approach to estimating uncollectible accounts on receivables with a significant financing component (e.g., notes receivable). For long-term receivables that *have not* experienced a deterioration in credit quality after origination, uncollectible accounts are estimated based on expected losses over the next 12 months. For long-term receivables that experience a credit quality decline, uncollectible accounts are estimated based on lifetime expected losses (which is the model used under GAAP for all receivables).
- The fair value option is similar under GAAP and IFRS but not identical. The international standard related to the fair value option is subject to certain qualifying criteria not in the U.S. standard. In addition, there are some differences in the financial instruments covered.
- Under IFRS, bank overdrafts are generally reported as cash. Under GAAP, such balances are reported as liabilities.
- IFRS and GAAP differ in the criteria used to account for transfers of receivables. IFRS is a combination of an approach focused on risks and rewards and loss of control. GAAP uses loss of control as the primary criterion. In addition, IFRS generally permits partial transfers; GAAP does not.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 7

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Valuation of Inventories: A Cost-Basis Approach

WHAT is inventory?

Inventories are assets that a company holds for sale. For retailers, like **Best Buy** or **Urban Outfitters**, purchases of merchandise inventory are held for reselling to customers. Manufacturers, such as **Ford**, **SC Johnson**, or **3M**, hold inventory in three inventory accounts—Raw Materials, Work in Process, and Finished Goods. Regardless of the type of company, when inventory is sold, it results in gross profit, measured as the sales value less the cost of the inventory sold.

Target
(in millions)

Consolidated Statements of Financial Position		Consolidated Statements of Operations	
Assets			
Cash and cash equivalents	$2,577	Sales	$78,112
Inventory	8,992	Cost of sales	54,864
Other current assets	1,333	Gross profit	$23,248
Total current assets	$12,902	**Net income**	$3,281

WHY is accounting information about inventory important?

The investment in inventories is frequently the largest current asset of merchandising (retail) and manufacturing businesses. For example, consider the recent financial statements of **Target**. Inventory comprises 70% ($8,992 ÷ $12,902) of current assets. Cost of sales, which measures the cost of inventory sold during the year, is a key determinant of gross profit. For Target, gross profit represents 30% ($23,248 ÷ $78,112) of sales revenue and is the main driver of net income.

The importance of comparable information on inventory costs is illustrated by how some online companies insist on reporting some selling costs, such as fulfillment costs related to inventory shipping and warehousing, as part of administrative expenses instead of as cost of goods sold. For example, **Amazon** reported $58.5 billion of costs associated with fulfilling customer orders (this practice is allowable within GAAP **if** applied consistently and adequately disclosed). Some experts thought Amazon should include those expenses in costs of goods sold, which would substantially lower its gross profit, as the adjacent table shows (dollars in millions).

	As Reported	With Fulfillment Expense
Total net sales	$386,064	$386,064
Cost of sales	233,307	291,824
Gross profit	$152,757	$ 94,240
Gross margin %	39.57%	24.41%

As indicated, Amazon's reporting of these costs conveys a much rosier gross profit story and may not be comparable to traditional retailers. This example highlights the importance of good reporting of accounting information about inventories and related costs.

HOW do we account for inventories?

Companies record purchases of inventory at historical cost when they obtain control of the goods. Cost of goods sold is recorded at the time of a sale, generally using one of three cost flow assumptions: (1) average-cost; (2) first-in, first-out (FIFO); or (3) last-in, first-out (LIFO). The choice of cost flow assumption is affected by a number of business and tax-related factors. In many cases, companies that use the LIFO method follow an approach called dollar-value LIFO. [1] (See the FASB Codification References section near the end of the chapter.)

Source: "Amazon's Deceptive Accounting Games," *Seeking Alpha* (February 12, 2018).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 7.1 Identify inventory classifications and different inventory systems.	**7.1 Inventory Issues** • Classification • Cost flow • Control	Examples **7.1** Inventory Systems **7.2** Inventory Shortage Put It into Practice LO 7.1 Record Inventory
LO 7.2 Determine the goods and costs included in inventory.	**7.2 Goods and Costs Included in Inventory** • Goods included • Costs included	Examples **7.3** Returns **7.4** Purchase Discounts Put It into Practice LO 7.2 Determine and Record Inventory Costs
LO 7.3 Describe and compare the cost flow assumptions used to account for inventories.	**7.3 Which Cost Flow Assumption to Adopt?** • Cost flow assumptions • Summary analysis • Basis for selection • Switching methods	Examples **7.5** Specific Identification **7.7** FIFO **7.6** Average-Cost **7.8** LIFO Put It into Practice LO 7.3 Compute Inventory Using Cost Flow Assumptions
LO 7.4 Identify special issues related to LIFO.	**7.4 Special Issues Related to LIFO** • LIFO reserve • LIFO liquidation • Dollar-value LIFO • Comparison of LIFO approaches	Examples **7.9** LIFO Reserve/LIFO Effect **7.11** Dollar-Value LIFO **7.12** Double-Extension Method **7.10** LIFO Reserve Adjustment Put It into Practice LO 7.4 Use the Dollar-Value LIFO Method
LO 7.5 Determine the effects of inventory errors on the financial statements.	**7.5 Effect of Inventory Errors** • Ending inventory misstated • Purchases and inventory misstated	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

7.1 Inventory Issues

LEARNING OBJECTIVE 1

Identify inventory classifications and different inventory systems.

Classification

Inventories are asset items that a company holds for sale in the ordinary course of business, or goods that it will use or consume in the production of goods to be sold. The description and measurement of inventory requires careful attention. The investment in inventories is frequently the largest current asset of merchandising (retail) and manufacturing businesses.

- **Merchandising companies**, such as **Walmart Inc.**, usually purchase their merchandise in a form ready for sale. They report the cost assigned to unsold units left on hand as **merchandise inventory**. Only one inventory account, Inventory, appears in the financial statements.
- **Manufacturing companies**, such as **Procter & Gamble**, produce goods to sell to merchandising companies. Although the products they produce may differ, manufacturers normally have the three following inventory accounts.
  1. **Raw materials inventory**. This account represents the cost of goods and materials on hand but not yet placed into production. Raw materials include the wood to make a baseball bat or the steel to make a car. These materials can be traced directly to the end product.
  2. **Work in process inventory**. At any point in a continuous production process, some units are only partially processed. This account represents the cost of the raw material for these unfinished units, plus the direct labor cost applied specifically to this material and a ratable share of manufacturing overhead costs.
  3. **Finished goods inventory**. This account includes the costs identified with the completed but unsold units on hand at the end of the fiscal period.

Illustration 7.1 contrasts the financial statement presentation of inventories of Walmart with those of Procter & Gamble (P&G).

ILLUSTRATION 7.1 Comparison of Presentation of Current Assets for Merchandising and Manufacturing Companies

Merchandising Company

Walmart Inc.
Balance Sheets

	Jan. 31, 2020
Current assets (in millions)	
Cash and cash equivalents	$ 9,465
Receivables, net	6,284
Inventories:	44,435
Prepaid expenses and other	1,622
Total current assets	$61,806

Manufacturing Company

Procter & Gamble Company
Balance Sheets

	Jan. 30, 2020
Current assets (in millions)	
Cash and cash equivalents	$16,181
Accounts receivable	4,178
Inventories:	
Materials and supplies	$1,414
Work in process	674
Finished goods	3,410
Total inventories	5,498
Prepaid expenses and other current assets	2,130
Total current assets	$27,987

Note that a manufacturing company like P&G also might include a Manufacturing or Factory **Supplies Inventory** account. In it, P&G would include such items as machine oils, nails, cleaning material, and the like—supplies that are used in production but are not the primary materials being produced. The remainder of the balance sheet is essentially the same for the two types of companies.

Illustration 7.2 shows the differences in the flow of costs through a merchandising company and a manufacturing company.

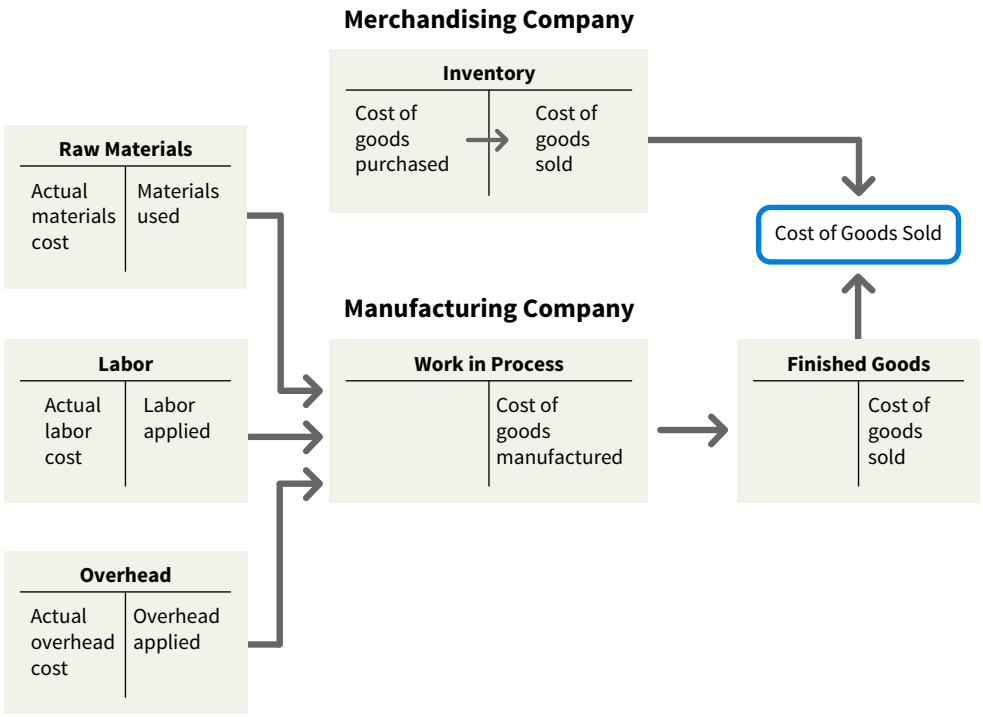


ILLUSTRATION 7.2 Flow of Costs Through Manufacturing and Merchandising Companies

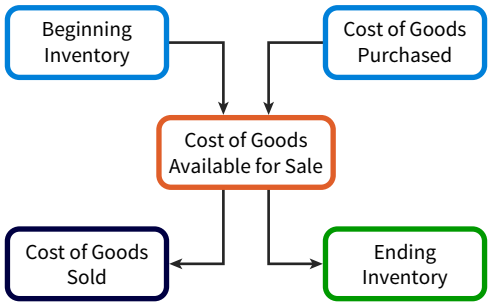
Inventory Cost Flow

Understanding the flow of inventory costs is important to mastering the accounting for inventory and cost of goods sold. Remember—**inventory on hand**, on the shelves or in a warehouse, is an asset. The inventory provides a future economic benefit because the company can sell it and generate profit and cash flow. Companies that sell or produce goods report inventory and cost of goods sold at the end of each accounting period. The flow of costs for a company is as follows.

1. Beginning inventory plus the cost of goods purchased or manufactured is the cost of goods available for sale.
2. As goods are sold, they are assigned to cost of goods sold.
3. Those goods that are not sold by the end of the accounting period represent ending inventory.

Illustration 7.3 shows these relationships.

ILLUSTRATION 7.3 Inventory Cost Flow



As indicated, goods are either sold or they are left on hand as follows.

- **Ending inventory.** The total cost of inventory that remains on hand that will be reported on the balance sheet as a current asset.
- **Cost of goods sold**. The total cost of the items that were sold that will be reported as an expense on the income statement.

One of the tools we use to address some of these inventory issues is the **cost of goods sold formula**. Companies use the cost of goods sold formula when determining how to allocate inventory costs at the end of a period. Illustration 7.4 shows the calculation of the cost of goods sold formula with some example numbers.

ILLUSTRATION 7.4 Computation of Cost of Goods Sold

The **cost of goods available for sale** or use is the sum of (1) the cost of the goods on hand at the beginning of the period, and (2) the cost of the goods acquired or produced during the period.

Beginning inventory, Jan. 1	$100,000
Cost of goods acquired or produced during the year	800,000
Total cost of goods available for sale	**900,000**
Ending inventory, Dec. 31	(200,000)
Cost of goods sold during the year	**$700,000**

The **cost of goods sold** is the difference between (1) the cost of goods available for sale during the period, and (2) the cost of goods on hand at the end of the period.

Keep in mind that the number of goods sold during a period seldom corresponds exactly to the number of goods purchased. As a result, a company's inventory either increases or decreases during the period. Companies use one of two types of systems for maintaining accurate inventory records for these costs—the perpetual system or the periodic system.

Perpetual System

A **perpetual inventory system** continuously tracks changes in the Inventory account. That is, a company records all purchases and sales of goods directly in the Inventory account **as they occur**. The accounting features of a perpetual inventory system are as follows.

1. Purchases of merchandise for resale or raw materials for production are debited to Inventory rather than to Purchases.

2. Freight-in is debited to Inventory, not Purchases. Purchase returns and allowances and purchase discounts are credited to Inventory rather than to separate accounts.
3. Cost of goods sold is recorded at the time of each sale by debiting Cost of Goods Sold and crediting Inventory.
4. A subsidiary ledger of individual inventory records is maintained as a control measure. The subsidiary records show the quantity and cost of each type of inventory on hand.

Inventory (perpetual system)

Debit	Credit
Beg. bal.	
Purchases	Returns/allow.
Freight-in	Discounts
	Sales
End. bal.	

Remember, inventory is an asset which is a permanent account. Therefore, any remaining, or ending, balance in inventory rolls forward to the next period as beginning inventory. It is rare that inventory would ever have a zero balance.

The perpetual inventory system provides a continuous record of the balances in both the Inventory account and the Cost of Goods Sold account. Think about the optical scanners when you check out at **Target**, **Best Buy**, or your favorite grocery store. Those systems include accounting software that automatically records the sales information. It is those scanners that make the perpetual inventory system possible.

Periodic System

Under a **periodic inventory system**, a company determines the quantity of inventory on hand only periodically, as the name implies. To do so, a company does the following.

① → ② → ③

①	②	③
Records all acquisitions of inventory during the accounting period by debiting the Purchases account.	Adds the total in the Purchases account at the end of the accounting period (including any adjustments for freight, discounts, and returns captured in related accounts) to the cost of the inventory on hand at the beginning of the period to determine the total cost of the goods available for sale during the period.	Computes the cost of goods sold by subtracting the ending inventory from the cost of goods available for sale.

Purchases and Related Accounts (periodic system)

Debit	Credit
Beg. bal.	
Purchases	Returns/allow.
Freight-in	Discounts
End. bal.	

Note that under a periodic inventory system, the cost of goods sold is a residual amount that depends on a physical count of ending inventory. This process is referred to as "taking a physical inventory." Companies that use the periodic system take a physical inventory at least once a year.

Example 7.1 Inventory Systems

FACTS To illustrate the difference between a perpetual and a periodic system, assume that **Trader Joe's** had the following transactions during the current year related to jars of its famous cookie butter spread.

Beginning inventory	100 jars at $ 6 = $ 600
Purchases	900 jars at $ 6 = $5,400
Sales	600 jars at $12 = $7,200
Ending inventory	400 jars at $ 6 = $2,400

QUESTION How should Trader Joe's record these transactions under perpetual and periodic inventory systems?

SOLUTION

Perpetual Inventory System			Periodic Inventory System		
Beginning inventory, 100 units at $6:					
The Inventory account shows the inventory on hand at $600.			The Inventory account shows the inventory on hand at $600.		
Purchase 900 units at $6:					
Inventory	5,400		Purchases	5,400	
Accounts Payable		5,400	Accounts Payable		5,400
Sales of 600 units at $12:					
Accounts Receivable	7,200		Accounts Receivable	7,200	
Sales Revenue		7,200	Sales Revenue		7,200
Cost of Goods Sold (600 at $6)	3,600		No entry		
Inventory		3,600			
End-of-period entries for Inventory account, 400 units at $6:					
No entry necessary. The Inventory account shows the ending balance of $2,400 ($600 + $5,400 − $3,600).			Inventory (ending by count)	2,400	
			Cost of Goods Sold	3,600	
			Purchases		5,400
			Inventory (beginning)		600

Using the perpetual method, Trader Joe's can quickly and easily track its inventory of cookie butter spread throughout the year. Under the periodic method, Trader Joe's must (1) count the jars of cookie butter spread on its shelf at the end of the year and (2) record an end-of-period journal entry to close out the Purchases account and record ending inventory.

Inventory Control

All companies need an accurate inventory accounting system. Think about these situations:

- **What happens if a company does not stock enough inventory?** It may lose sales and customers to competitors.
- **What happens if a company stocks too much inventory?** The costs of storing the inventory may be too high, or the inventory may become obsolete and customers do not want to purchase it.
- **What happens if a company does not adequately protect its inventory?** The items could be stolen or damaged.

Remember, a company spends considerable amounts on purchasing inventory for resale, so it should also spend resources to track it and protect it.

We discussed earlier that companies using a periodic inventory system must physically count inventory each period to determine how much remains on hand and how much was sold. To maintain proper inventory control, **all companies should physically count inventory on hand at least once a year.** Ideally, the count should take place near the end of the company's fiscal year to properly report inventory quantities on the financial statements.[1]

Companies that use a perpetual inventory system take a physical count to ensure that actual inventory on hand matches the inventory balance in the accounting records. What would cause differences between the counted amount and the amount showing in the

[1]Some companies have developed methods of determining inventories, including statistical sampling, that are sufficiently reliable to make unnecessary an annual physical count of each item of inventory.

accounting records? It depends on the type of inventory the company carries, but in general, differences are caused by theft, damage, spoilage, and errors in recordkeeping.

When differences are discovered in a perpetual system, a company makes an adjusting entry to correct the inventory and cost of goods sold accounts. In practice, companies sometimes report the difference in Inventory Over and Short rather than the Cost of Goods Sold account. Inventory Over and Short is reported on the income statement in the "Other revenue and gains" or "Other expenses and losses" section.

Example 7.2
Inventory Shortage

FACTS At the end of the reporting period, the perpetual inventory account reported an inventory balance of $4,000. However, a physical count indicates inventory of $3,800 is actually on hand.

QUESTION What entry would the company make to record the shortage?

SOLUTION

To record the necessary write-down:

Inventory Over and Short	200	
Inventory		200

A company using the periodic inventory system does not report the account Inventory Over and Short. The reason: The periodic method does not have accounting records against which to compare the physical count. As a result, a company buries inventory overages and shortages in Cost of Goods Sold. This is a disadvantage of the periodic method because a company may not be aware that goods are being stolen, spoiling, or being thrown away. The company can only count what is on hand and assume that the rest of the goods were sold.

Accounting Matters — Staying Lean

When you drop by a **Walmart** store, you are witnessing one of history's greatest logistical and operational successes. With over 10,500 retail locations in 24 countries, Walmart manages $45 billion in inventory. With a business model built on "everyday low price," effective and efficient inventory control and supply chain management is imperative. Walmart uses its buying power in the supply chain to purchase an increasing proportion of its goods directly from manufacturers and on a combined basis across geographic borders. Walmart estimates that it saves 5–15% across its supply chain by implementing direct purchasing on a combined basis for the 15 countries in which it operates.

And for Walmart, no detail is too small. Recently, Walmart began testing a new system of bringing extra inventory out of its back storage rooms onto the top shelves of the sales floor. The change makes the inventory more accessible, brings more sales associates into the store where they can help customers, and opens up storage space for more productive uses. In one location, the freed-up space was used for career-building education for Walmart employees!

Sources: J. Birchall, "Walmart Aims to Cut Supply Chain Cost," *Financial Times* (January 4, 2010); and S. Nassauer, "Wal-Mart Shrinks the Big Box, Vexing Vendors," *Wall Street Journal* (October 25, 2015).

Put It into Practice LO 7.1
Record Inventory

FACTS Assume that **The Gap** uses a perpetual inventory system. Beginning inventory consists of 50 T-shirts that cost $34 each. During June, The Gap purchased 150 units at $34 each on account, returned 6 T-shirts for credit, and sold 125 T-shirts for $45 each on account.

INSTRUCTIONS

a. Journalize the June inventory transactions for The Gap.

b. Use a T-account to post the June transactions to the inventory account and calculate the ending inventory balance.

SOLUTION

a.

Inventory (150 × $34)		5,100	
Accounts Payable			5,100
Accounts Payable (6 × $34)		204	
Inventory			204
Accounts Receivable (125 × $45)		5,625	
Sales Revenue			5,625
Cost of Goods Sold (125 × $34)		4,250	
Inventory			4,250

b.

Inventory

Beg. inventory (50 × $34)	1,700		
Purchases	5,100		
		Returns	204
		Sales	4,250
End. inventory	2,346		

7.2 Goods and Costs Included in Inventory

LEARNING OBJECTIVE 2

Determine the goods and costs included in inventory.

Goods Included in Inventory

A company recognizes inventory and accounts payable at the time it controls the asset. Control is therefore the key factor in determining when purchases and sales of a product are recognized. For example, consider the following.

- When **Verizon** purchases **Apple** watches for resale, Verizon records these watches as inventory at the time control passes to Verizon.
- Verizon controls the Apple watches when it has the ability to direct the use of and obtain substantially all the benefits from these watches.
- Control also includes Verizon's ability to prevent other companies from directing the use of or receiving the benefits from these watches.

Companies often look to various indicators to determine whether control has passed, as indicated in Chapter 3. One of these indicators, passage of title, is often used to determine control because the rights and obligations are established legally. For example, when Verizon purchases the Apple watches, legal title belongs to Verizon until the watches are sold to customers.[2]

[2]As indicated in Chapter 6, Lululemon recognized accounts receivable and sales revenue when it transferred control of its yoga outfit to its customer, Jennifer Burian.

Goods in Transit

Often, a company like **Walgreens** purchases merchandise that remains in transit—not yet received—at the end of a fiscal period. Who owns the goods while they are in transit? The accounting for these goods depends on who controls the merchandise. In these situations, companies generally determine control based on who has legal title to the goods by applying the "passage of title" rule.

- If a supplier ships goods to Walgreens **f.o.b. shipping point**, title passes to Walgreens when the supplier delivers the goods to the common carrier, which acts as an agent for Walgreens. (The abbreviation f.o.b. stands for free on board.)
- If the supplier ships the goods **f.o.b. destination**, title passes to Walgreens only when it receives the goods from the common carrier.

"Shipping point" and "destination" are often designated by a particular location, for example, f.o.b. Denver.

Illustration 7.5 indicates how legal title and ownership are determined by the terms of sale.

ILLUSTRATION 7.5 Terms of Sale

FOB Shipping Point: Buyer Pays Freight Costs
Ownership passes to buyer when loaded on the truck
Seller
Buyer
FOB Destination: Seller Pays Freight Costs
Ownership passes to buyer upon delivery
Seller
Buyer

When Walgreens obtains legal title to goods, it records them as purchases in that fiscal period, assuming a periodic inventory system. Therefore, goods shipped to Walgreens f.o.b. shipping point, but in transit at the end of the period, belong to Walgreens. Walgreens should show the purchase and the related accounts payable in its records because legal title to these goods passed to Walgreens upon shipment of the goods. To disregard such purchases results in understating inventories and accounts payable in the balance sheet.

Consigned Goods

Companies market certain products through a **consignment** shipment. Under this arrangement, a company like Williams Art Gallery (the consignor) ships various art merchandise to **Sotheby's Holdings** (the consignee), which acts as Williams' agent in selling the **consigned goods**. Sotheby's agrees to accept the goods without any liability, except to exercise due care and reasonable protection from loss or damage, until it sells the goods to a third party. When Sotheby's sells the goods, it remits to Williams the revenue, less a selling commission and expenses incurred.

Goods out on consignment remain the property of the consignor (Williams in the example above). Although Sotheby's has physical possession of the goods, it does not have control because legal title and the risks and rewards of ownership remain with Williams. Williams therefore includes the goods in its inventory at cost. If goods out on consignment are a material amount, a consignor discloses the inventory on consignment in the notes to the financial statements.

The consignee makes **no entry** to the Inventory account for goods received. The consignee should be extremely careful not to include any of the goods consigned as a part of its inventory. Additional discussion related to consignments is provided in Chapter 17.

Consignor

Williams Balance Sheet
Dec. 31, 2025

Cash	XXX
Accounts receivable	XXX
Inventory	XXX
Other current assets	XXX

Transfer of inventory; inventory cost remains on consignor's balance sheet

Consignee

Sotheby's Balance Sheet
Dec. 31, 2025

Cash	XXX
Accounts receivable	XXX
Other current assets	XXX

Sales with Returns

As we indicated earlier, transfer of legal title is the general guideline used to determine whether a company should include an item in inventory. Unfortunately, transfer of legal title and the underlying substance of the transaction sometimes do not match. For example, legal title may have passed to the purchaser, but the seller of the goods retains control of the inventory.

Sales with high rates of return illustrates the types of problems companies encounter in practice. In industries such as publishing, music, toys, and sporting goods, formal or informal agreements often exist that permit purchasers to return inventory for a full or partial refund.

Example 7.3
Returns

FACTS Quality Publishing Company sells textbooks to Campus Bookstores with an agreement that Campus may return for full credit any books not sold. Historically, Campus Bookstores returned approximately 25% of the textbooks from Quality Publishing.

QUESTION How should Quality Publishing report its sales transactions with Campus Bookstores?

SOLUTION

The key question to determine whether a sale occurs is: Has Quality Publishing transferred control of these goods to Campus Bookstore?

- Because Campus Bookstore now has the ability to direct the use of and obtain substantially all the benefits from these textbooks, these transactions are normally recorded as a sale by Quality Publishing.
- In addition, the normal indicators for transfer of control, such as passage of legal title, loss of physical control, and transfer of risks and rewards of ownership, appear to have occurred. However, Quality Publishing must also recognize that only partial control has transferred to Campus Bookstore.

Therefore, Quality Publishing does the following.

1. **Record sales revenue at the amount it expects to receive from the transaction.** As discussed in Chapter 6, this transaction involves variable consideration. Therefore, the transaction price is adjusted to recognize that a portion of these textbooks will be returned.
2. **Establish an estimated inventory return account to recognize that some of its textbooks will be returned**. The reason for recording estimated inventory return is that control over a significant number of the textbooks has not passed to Campus Bookstore.

As indicated in Example 7.3, control does pass from seller (Quality Publishers) to buyer (Campus Bookstores) for a majority of the textbooks but not all of them. Quality Publishing therefore records an estimated inventory return amount to recognize that fact. If returns are unpredictable and uncertain, Quality Publishing should not consider the textbooks sold and should not remove the goods from its inventory.

A similar situation occurs when a company "sells" inventory but enters into either an implicit or explicit repurchase agreement. These arrangements are often described in practice as "**parking transactions**." As with sales returns, when a repurchase agreement exists, the company should report the inventory and related liability (to repurchase the inventory) on its books. [2] The reason? The seller has retained control of the asset (see **Underlying Concepts**).

These examples illustrate the difficulty of determining when control has passed in situations where substantial returns or repurchase agreements are involved. [3] We provide expanded discussion of special sales agreements and high rates of returns in Chapter 17.

Underlying Concepts

Recognizing revenue at the time the inventory is "parked" violates the revenue recognition principle. As discussed in Chapter 3, a performance obligation is not met because control has not been transferred to the buyer.

Accounting Matters — No Parking

In one of the more elaborate accounting frauds, employees at **Kurzweil Applied Intelligence Inc.** booked millions of dollars in phony sales during a two-year period that straddled two audits and an initial public stock offering (IPO). They dummied up phony shipping documents and logbooks to support bogus sales transactions. Then, they shipped high-tech equipment, not to customers but to a public warehouse for "temporary" storage, where some of it sat for 17 months. So Kurzweil still had ownership and as discussed, no sale should be recorded on these parking transactions, since Kurzweil still controlled the inventory.

To foil auditors' attempts to verify the existence of the inventory, Kurzweil employees moved the goods from warehouse to warehouse. To cover the fraudulently recorded sales transactions as auditors closed in, the employees brought back the still-hidden goods, under the pretense that the goods were returned by customers. When auditors uncovered the fraud, the bottom dropped out of Kurzweil's stock.

In response to these shady practices, companies and auditors are harnessing technology-enabled tools to monitor and better track inventory. For example, **EY** is expanding the use of drones in inventory observations, as part of its digital auditing capabilities, which helps improve monitoring capabilities as well as the accuracy and frequency of inventory counts. And a growing number of companies are using barcode systems and radio-frequency identification (RFID), which attaches a digital tag to items of inventory. This enables individual products or components to be tracked throughout the supply chain, enhancing inventory control, stock security, and quality management. The costs of these technology tools have come down recently, so that we now have more tools to crack down on inventory fraudsters.

Sources: Adapted from "Anatomy of a Fraud," *BusinessWeek* (September 16, 1996), pp. 90–94; "EY Scaling the Use of Drones in the Audit Process," *EY London* (June 13, 2017); and B. Dohrer, "How Auditors Can Test Inventory Without a Site Visit," *Journal of Accountancy* (March 26, 2020).

Costs Included in Inventory

One of the most important problems in dealing with inventory concerns the dollar amount at which to carry the inventory in the accounts. **Companies generally account for the acquisition of inventories, like other assets, on a cost basis.**

Product Costs versus Period Costs

Product costs are those costs **directly** connected with bringing the inventory to the buyer's place of business and converting the goods to a salable condition. **Period costs** are **indirectly** related to the acquisition of goods and are generally more difficult to assign to specific inventory items. **Illustration 7.6** lists examples of product and period costs and the accounting treatment of each.

ILLUSTRATION 7.6 Product versus Period Costs

Type of Cost	Examples	Accounting Treatment
Product cost	• Freight charges on goods purchased • Insurance costs incurred by buyer while goods are in transit • Unpacking and unloading costs • Preparing goods for sale	Included in the inventory asset account in the balance sheet
Period cost	• Selling expenses related to inventory • Interest costs related to financing inventory purchases[3] • General and administrative costs related to inventory	Expensed as incurred in the income statement

[3]The FASB ruled that companies should not capitalize interest costs for inventories that they routinely manufacture or otherwise produce in large quantities on a repetitive basis. On the other hand, companies should capitalize interest costs related to assets constructed for internal use or assets produced as discrete projects (such as ships or real estate projects) for sale or lease. We discuss interest capitalization as it relates to these assets in Chapter 9. **[4]**

Even though period costs are just as much a cost of the product as the initial purchase price, they may be so indirectly related to the inventory purchasing process that any allocation of these costs is arbitrary and time-consuming. It is more practical for companies to simply expense the costs as incurred.[4]

Cash Discounts (Purchase Discounts)

We discussed cash discounts (sales discounts) from the seller's perspective in Chapter 6. We now consider cash discounts (purchase discounts) from the purchaser's perspective. **Purchase Discounts** can be accounted for using either the gross method or the net method.

If a company uses the **gross method** under the periodic inventory system, it records the purchases and accounts payable at the invoice price (**the gross amount**). A purchase discount is recorded if the company pays within the discount period. A company reports purchase discounts as a deduction from purchases when determining cost of goods sold.

Under the **net method,** a company recognizes the purchase and related accounts payable at the invoice price **less the cash discount**. If the company does not take the discount within the discount period, it records a Purchase Discount Loss. Purchase Discount Loss is a financial expense and is reported in the "Other Expenses and losses" section of the income statement.

Example 7.4
Purchase Discounts

FACTS Assume that **BCycle** has the following transactions.

- Purchased bicycle inventory with cost $10,000, terms 2/10, net 30.
- Invoices of $4,000 are paid within discount period.
- Invoices of $6,000 are paid after discount period.

QUESTION How should BCycle record these transactions under gross and net methods using a periodic system?

SOLUTION

Gross Method			Net Method		
Purchase cost $10,000, terms 2/10, net 30:					
Purchases	10,000		Purchases	9,800[b]	
Accounts Payable		10,000	Accounts Payable		9,800
Invoices of $4,000 are paid within discount period:					
Accounts Payable	4,000		Accounts Payable	3,920	
Purchase Discounts		80[a]	Cash		3,920
Cash		3,920			
Invoices of $6,000 are paid after discount period:					
Accounts Payable	6,000		Accounts Payable	5,880	
Cash		6,000	Purchase Discounts Lost[c]	120[c]	
			Cash		6,000

[a]$4,000 × .02; [b]$10,000 × .98; [c]$6,000 × .02

If using a perpetual inventory system, entries to Purchases and Purchase Discounts are recorded in the Inventory account.

[4]Companies should not record abnormal freight, handling costs, and amounts of wasted materials (spoilage) as inventory costs. If the costs associated with the actual level of spoilage or product defects are greater than the costs associated with normal spoilage or defects, the company should charge the excess as an expense in the current period. [5]

The net method is considered better for two reasons.

1. It provides a correct reporting of the cost of the asset and related liability.
2. It can measure management inefficiency by holding management responsible for discounts not taken.

However, many believe that the somewhat more complicated net method is not justified by the resulting benefits (see **Underlying Concepts**). This could account for the widespread use of the less logical but simpler gross method. In addition, some contend that management is reluctant to report in the financial statements the amount of purchase discounts lost. *Use the gross method to record purchase discounts for homework problems unless specified otherwise.*

Underlying Concepts

Not using the net method because of resultant difficulties is an example of the application of the cost constraint.

Put It into Practice LO 7.2

Determine and Record Inventory Costs

FACTS Gard Company sells basketballs and basketball hoops and is analyzing the following inventory information at year-end 2025.

1. Gard took a physical inventory of basketballs on December 31 and determined that there were $200,000 worth of basketballs on hand. Not included in the physical count were $25,000 of basketballs purchased from Ryan Corporation, f.o.b. shipping point, and $22,000 of basketballs sold to Moore Inc. for $30,000, f.o.b. destination. Both the Ryan purchase and the Moore sale were in transit at year-end.
2. Gard had the following information for basketball hoops in its general ledger for the year 2025.

Basketball hoops purchased for resale	$507,500
Purchase returns	9,000
Marketing expense	7,100
Freight-in	19,220
Interest on notes payable to vendors	4,100
Freight-out (delivery expense on sales)	22,650
Cash discounts on purchases	5,190

INSTRUCTIONS

a. What amount should Gard report as its December 31 basketball inventory?

b. What is Gard's inventoriable cost related to basketball hoops for 2025?

SOLUTION

a. Basketball inventory balance:

December 31 inventory per physical count	$200,000
Goods-in-transit purchased FOB shipping point	25,000
Goods-in-transit sold FOB destination	22,000
December 31 inventory	$247,000

b. Basketball hoops inventoriable costs for 2025:

Merchandise purchased		$507,500
Add: Freight-in		19,220
		526,720
Less: Purchase returns	$9,000	
Purchase discounts	5,190	14,190
Inventoriable cost		$512,530

Marketing expense and freight-out are recorded as selling expenses.

7.3 Which Cost Flow Assumption to Adopt?

LEARNING OBJECTIVE 3

Describe and compare the cost flow assumptions used to account for inventories.

During any given fiscal period, companies typically purchase merchandise at several different prices. If a company prices inventories at cost and it made numerous purchases at different unit costs, which cost price should it use? Conceptually, a specific identification of the given items sold and unsold seems optimal. But this measure often proves both expensive and impossible to achieve. **So what is a company to do?**

Tracking costs of inventory depends heavily on the type of inventory carried. Companies that have small amounts of unique inventory items can use the specific identification method. For example, a small jewelry store has limited inventory and many of the items are unique. In this situation, the store knows its cost for each unique piece of jewelry, and it can easily track the cost of each item in its accounting system.

Companies with large amounts of inventory of similar items do not use the specific identification method. As a result, companies use one of several systematic inventory cost flow assumptions.

- Accounting standards allow these companies to make a cost flow assumption. The key word here is "assumption." The company is going to "assume" that goods are sold in a certain pattern.
- There is no requirement that the cost flow assumption adopted be consistent with the physical movement of goods. A company's major objective in selecting a method should be to choose the one that, under the circumstances, most clearly reflects periodic income. **[6]**

For example, assume that ZenLife Inc. had the following transactions for its inventory of stress reduction balls in its first month of operations, as shown in **Illustration 7.7**.

ILLUSTRATION 7.7 ZenLife Transactions in the Cost of Goods Sold Formula

	No. of Units	Cost per Unit	Total Cost
Beginning inventory	0	$0.00	$ 0
Purchases			
March 2	2,000	4.00	8,000
March 15	6,000	4.40	26,400
March 30	2,000	4.75	9,500
Cost of goods available for sale	10,000		$43,900
Ending inventory	6,000		?
Cost of goods sold	4,000		?

As indicated in Illustration 7.7, we are focusing on ZenLife's **cost** of inventory items, not on ZenLife's selling price of the goods. In addition, we highlight the ZenLife information in the cost of goods sold formula. The goal is to determine the amounts for the "question marks."

Cost Flow Assumptions

We will determine ending inventory and cost of goods sold for Zenlife, using four different cost flow assumptions: specific identification, average-cost, first-in, first-out (FIFO), and last-in, first-out (LIFO).

Specific Identification

Specific identification calls for identifying the specific cost of each item sold and each item left in inventory. This method may be used only in instances where it is practical to separate physically the different purchases made. Companies only use this method when handling a relatively small number of costly, easily distinguishable items. In the retail trade, this includes some types of jewelry, automobiles, and some furniture. In manufacturing, it includes special orders and many products manufactured under contract. Example 7.5 shows how ZenLife computes the ending inventory and cost of goods sold, using specific identification.

Example 7.5
Specific Identification Inventory Cost Flow

FACTS Refer to the information in Illustration 7.7. ZenLife Inc.'s 6,000 units of ending inventory consists of:

- 1,000 units from the March 2 purchase.
- 3,000 from the March 15 purchase.
- 2,000 from the March 30 purchase.

QUESTION How would you compute the cost of ZenLife's ending inventory and cost of goods sold under the specific identification method?

SOLUTION

Date	No. of Units	Unit Cost	Total Cost
March 2	1,000	$4.00	$ 4,000
March 15	3,000	4.40	13,200
March 30	2,000	4.75	9,500
Ending inventory	6,000		$26,700

Cost of goods available for sale (computed in Illustration 7.7)	$43,900
Deduct: Ending inventory	26,700
Cost of goods sold	$17,200

The specific identification method appears ideal.

- Specific identification matches actual costs against actual revenue, and it reports ending inventory at actual cost.
- In other words, **under specific identification, the cost flow matches the physical flow of the goods**.

On closer observation, however, this method has certain deficiencies.

Some argue that specific identification allows a company to manipulate net income. For example, assume that a wholesaler purchases identical plywood early in the year at three different costs. When it sells the plywood, the wholesaler can select either the lowest or the highest cost to charge to cost of goods sold. It simply selects the plywood from a specific lot for delivery to the customer. A business manager, therefore, can manipulate net income by delivering to the customer the higher- or lower-cost item, depending on whether the company seeks lower or higher reported earnings for the period.

Another problem relates to the arbitrary allocation of costs that sometimes occurs with specific inventory items. For example, a company often faces difficulty in relating shipping charges, storage costs, and discounts directly to a given inventory item. This results in allocating these costs somewhat arbitrarily, leading to a "breakdown" in the precision of the specific identification method.[5]

[5]The film industry provides a good illustration of the cost allocation problem. Actors often receive a percentage of net income for a given movie or TV program. Some actors, however, have alleged that the studios allocate additional costs to successful projects to avoid sharing profits.

Average-Cost

As the name implies, the **average-cost method** tracks inventory items on the basis of the average cost of all similar goods available during the period. Determining the average cost of inventory will vary depending on whether the company uses a periodic or perpetual inventory system.

When using the **periodic inventory method**, in which the amount of inventory is computed at the end of the period, ZenLife determines the ending inventory and cost of goods sold using a **weighted-average method**, as shown in Example 7.6. Note that when companies have beginning inventory, it is also included in the calculation of total goods available for sale.

Example 7.6 Average-Cost Inventory Cost Flow (periodic method)

FACTS ZenLife Inc. uses the periodic method and has 6,000 units of ending inventory.

QUESTION How would you compute ZenLife's ending inventory and cost of goods sold using the weighted-average method?

SOLUTION

Date of Invoice	No. Units	Unit Cost	Total Cost
Beginning inventory			$ 0
March 2	2,000	$4.00	8,000
March 15	6,000	4.40	26,400
March 30	2,000	4.75	9,500
Total goods available	10,000		$43,900

Weighted-average cost per unit: $\frac{\$43,900}{10,000} = \$4.39$

Inventory in units: 6,000 units

Ending inventory: $6,000 \times \$4.39 = \$26,340$

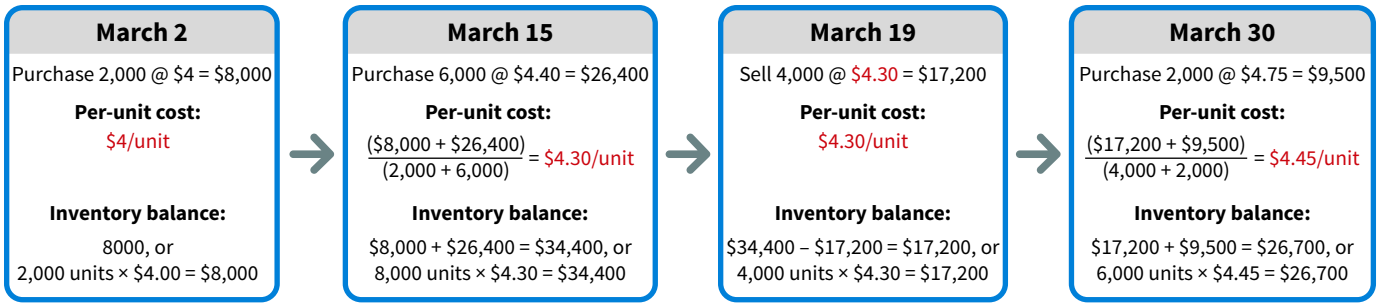
Cost of goods available for sale	$43,900
Deduct: Ending inventory	26,340
Cost of goods sold	$17,560

When using the **perpetual inventory** method, companies use the **moving-average method**. Since the inventory account is continuously updated for purchases of inventory, the average inventory cost will change each time a purchase is made, which results in a "moving average." **Illustration 7.8** shows the application of the average-cost method for perpetual records.

ILLUSTRATION 7.8 Moving-Average Method—Perpetual Inventory

Date	Purchased		Sold	Balance	
March 2	(2,000 @ $4.00)	$ 8,000		(2,000 @ $4.00)	$ 8,000
March 15	(6,000 @ 4.40)	26,400		(8,000 @ 4.30)	34,400
March 19			(4,000 @ $4.30) $17,200	(4,000 @ 4.30)	17,200
March 30	(2,000 @ 4.75)	9,500		(6,000 @ 4.45)	26,700

As indicated, ZenLife computes a **new average unit cost** each time it makes a purchase, as follows.


March 2
Purchase 2,000 @ $4 = $8,000
Per-unit cost:
$4/unit
Inventory balance:
8000, or
2,000 units × $4.00 = $8,000
March 15
Purchase 6,000 @ $4.40 = $26,400
Per-unit cost:
($8,000 + $26,400) / (2,000 + 6,000) = $4.30/unit
Inventory balance:
$8,000 + $26,400 = $34,400, or
8,000 units × $4.30 = $34,400
March 19
Sell 4,000 @ $4.30 = $17,200
Per-unit cost:
$4.30/unit
Inventory balance:
$34,400 – $17,200 = $17,200, or
4,000 units × $4.30 = $17,200
March 30
Purchase 2,000 @ $4.75 = $9,500
Per-unit cost:
($17,200 + $9,500) / (4,000 + 2,000) = $4.45/unit
Inventory balance:
$17,200 + $9,500 = $26,700, or
6,000 units × $4.45 = $26,700

Companies often use average-cost methods for practical rather than conceptual reasons. These methods have the following advantages.

- They are both simple to apply and objective.
- They are not as subject to income manipulation as some of the other inventory costing methods.

In addition, proponents of the average-cost methods reason that measuring a specific physical flow of inventory is often impossible. Therefore, it is better to cost items on an average-price basis. This argument is particularly persuasive when dealing with similar inventory items.

First-In, First-Out (FIFO)

The **first-in, first-out (FIFO) method** assumes that a company sells goods in the order in which it purchases them. In other words, the FIFO method assumes that **the first goods purchased are the first sold**. The inventory remaining must therefore represent the most recent purchases. Example 7.7 shows how ZenLife computes the ending inventory and cost of goods sold using the FIFO method, assuming ZenLife uses the **periodic inventory system**.

Example 7.7
FIFO Inventory Cost Flow (periodic system)

FACTS ZenLife Inc. uses the periodic system and has 6,000 units of ending inventory.

QUESTION What is ZenLife's ending inventory and cost of goods sold using the FIFO cost flow assumption?

SOLUTION

We know that 6,000 units are left in ending inventory. If we assume the first items (old items) into inventory are the first ones to be sold, that means the last items (newer items) into inventory are still on hand, as summarized in the following.

Date	No. Units	Unit Cost	Total Cost
Beginning inventory			$ 0
March 30	2,000	$4.75	9,500
March 15	4,000	4.40	17,600
Ending inventory	6,000		$27,100

Cost of goods available for sale (computed in Illustration 7.7)	$43,900
Deduct: Ending inventory	27,100
Cost of goods sold	$16,800

As indicated, the ending inventory consists of all 2,000 units from the March 30 purchase, and 4,000 units from the March 15 purchase. Once the cost of ending inventory is determined, it is easy to calculate cost of goods sold by subtracting ending inventory from cost of goods available for sale.

If ZenLife instead uses a **perpetual inventory system** in quantities and dollars, it attaches a cost figure to each sale of inventory. The cost of the 4,000 units removed on March 19 consists of the cost of the items purchased on March 2 and March 15. Illustration 7.9 shows the inventory on a FIFO basis **perpetual system** for ZenLife.

ILLUSTRATION 7.9 FIFO Method—Perpetual Inventory

Date	Purchased		Sold	Balance	
March 2	(2,000 @ $4.00)	$ 8,000		2,000 @ $4.00	$ 8,000
March 15	(6,000 @ 4.40)	26,400		2,000 @ 4.00 6,000 @ 4.40	34,400
March 19			2,000 @ $4.00 2,000 @ 4.40 ($16,800)	4,000 @ 4.40	17,600
March 30	(2,000 @ 4.75)	9,500		4,000 @ 4.40 2,000 @ 4.75	27,100

Here, the ending inventory is $27,100, and the cost of goods sold is $16,800 [(2,000 @ $4.00) + (2,000 @ $4.40)], which is the same result as FIFO under the periodic method in Example 7.7. **In all cases where FIFO is used, the inventory and cost of goods sold would be the same at the end of the month whether a perpetual or periodic system is used.** Why? Because the same costs will always be first in and, therefore, first out. This is true whether a company computes cost of goods sold as it sells goods throughout the accounting period (the perpetual system) or as a residual at the end of the accounting period (the periodic system).

Global View

IFRS does not permit LIFO. *See the IFRS Insights in Chapter 8 for a discussion of the similarities and differences between IFRS and GAAP regarding inventory.*

Last-In, First-Out (LIFO)

The **last-in, first-out (LIFO) method** matches the cost of the last goods purchased against revenue (see **Global View**). If ZenLife Inc. uses a **periodic inventory system**, it assumes that **the cost of the total quantity sold during the month comes from the most recent purchases**. Example 7.8 shows how ZenLife computes the ending inventory and cost of goods sold, using the LIFO method, assuming use of the periodic inventory system.

Example 7.8 LIFO Inventory Cost Flow (periodic system)

FACTS ZenLife Inc. uses a periodic system and has 6,000 units of ending inventory.

QUESTION How would you compute ZenLife's ending inventory and cost of goods sold using the LIFO cost flow assumption?

SOLUTION

We know that 6,000 units are left in ending inventory. If we assume the last items (newer items) into inventory are the first ones to be sold, that means the first items (older items) in inventory are still on hand, as summarized in the following.

Date of Invoice	No. Units	Unit Cost	Total Cost
Beginning inventory	0	$0.00	$ 0
March 2	2,000	4.00	8,000
March 15	4,000	4.40	17,600
Ending inventory	6,000		$25,600

Goods available for sale (computed in Illustration 7.7)	$43,900
Deduct: Ending inventory	25,600
Cost of goods sold	$18,300

As indicated, the ending inventory consists of all 2,000 units from the March 2 purchase, and 4,000 units from the March 15 purchase. Using the unit costs from those two purchases, the cost of ending inventory is $25,600. Once the cost of ending inventory is determined, it is easy to calculate cost of goods sold ($18,300) by subtracting ending inventory from cost of goods available for sale.

If ZenLife keeps a **perpetual inventory** record in quantities and dollars—such that it can reprice inventory layers with every sale—use of the LIFO method results in **different ending inventory and cost of goods sold amounts than the amounts calculated under the periodic method**. Illustration 7.10 shows these differences under the perpetual method.

ILLUSTRATION 7.10 LIFO Method—Perpetual Inventory

Date	Purchased	Sold	Balance
Beginning inventory			$ 0
March 2	(2,000 @ $4.00) $ 8,000		2,000 @ $4.00 8,000
March 15	(6,000 @ 4.40) 26,400		2,000 @ 4.00 6,000 @ 4.40 } 34,400
March 19		(4,000 @ $4.40) $17,600	2,000 @ 4.00 2,000 @ 4.40 } 16,800
March 30	(2,000 @ 4.75) 9,500		2,000 @ 4.00 2,000 @ 4.40 2,000 @ 4.75 } 26,300

Under LIFO, the amounts calculated for ending inventory and cost of goods sold will be different when using a perpetual system versus a periodic system. The month-end periodic inventory computation presented in Example 7.8 (inventory $25,600 and cost of goods sold $18,300) shows a different amount from the perpetual inventory computation in Illustration 7.10 (inventory $26,300 and cost of goods sold $17,600). This occurs because the perpetual system continuously updates inventory for both sales and purchases.

Therefore, when a sale occurs, a perpetual system assigns the cost from the immediately preceding purchase. For example, after the March 30 purchase, there are three layers of inventory because each layer has a different cost. When the next sale of inventory occurs, ZenLife assumes that the $4.75 layer will be sold first.

In contrast, the periodic system matches the total withdrawals for the month with the total purchases for the month in applying the LIFO method. The periodic computation assumed that ZenLife included the cost of the goods that it purchased on March 30 in the sale or issue on March 19. In contrast, the perpetual system matches each withdrawal with the immediately preceding purchases.

Inventory Valuation Methods—A Summary Analysis

Using the ZenLife example, let's compare the three major cost flow assumptions to show the effects they have on the financial statements. This comparison assumes the use of the **periodic inventory system** as well as the following additional information for ZenLife for the month of March.

- The selling price of the inventory items is $7.00 each. ZenLife sold 4,000 units in March; therefore, total sales revenue is $28,000. Note that selling price is not impacted by the inventory cost flow assumption chosen by the company.
- Operating expenses for March are $5,000.
- Income tax rate is 30%.

Illustration 7.11 shows the comparative results on financial statement items of the use of FIFO, average-cost, and LIFO. The amounts for cost of goods sold and inventory are obtained from Example 7.6 for average-cost, Example 7.7 for FIFO, and Example 7.8 for LIFO. Take a minute to review the results.

ILLUSTRATION 7.11 Comparative Results of FIFO, Average-Cost, and LIFO for ZenLife

	FIFO	Average-Cost	LIFO
Income Statement			
Sales	$28,000	$28,000	$28,000
Cost of goods sold	16,800	17,560	18,300
Gross profit	11,200	10,440	9,700
Operating expenses	5,000	5,000	5,000
Income before taxes	6,200	5,440	4,700
Income tax (30%)	1,860	1,632	1,410
Net income	$ 4,340	$ 3,808	$ 3,290
Balance Sheet			
Inventory	$27,100	$26,340	$25,600

What do you notice about the comparative income statements from Illustration 7.11? Since each method computes a different amount for cost of goods sold, it follows that each method results in a different amount for gross profit, income taxes, and net income. Also, the ending inventory amounts on the balance sheet are different.

What is causing these differences? During the month of March, ZenLife's cost of inventory increased. It started at $4.00 per unit and gradually increased to $4.75 per unit. When **inventory costs are rising**, the different methods will impact the income statement and balance sheet as follows.

- **LIFO: Results in the lowest gross profit, income tax, and net income**. Why? Because the higher inventory costs ($4.75 and $4.40) are included in cost of goods sold. The lower inventory costs are left in ending inventory on the balance sheet.
- **FIFO: Results in the highest gross profit, income tax, and net income**. Why? Because the lower inventory costs ($4.00 and $4.40) are included in cost of goods sold. The higher inventory costs are left in ending inventory on the balance sheet.
- **Average cost: Results in gross profit, income tax, net income, and inventory amounts that are between FIFO and LIFO.**

What if inventory costs are declining during the period? The analysis above would then yield the opposite results. FIFO would have the lowest net income, and LIFO would have the highest net income.

Basis for Selection of Inventory Method

How does a company choose among the various inventory methods? There are no absolute rules regarding the choice, and each method has its advantages and disadvantages. Illustration 7.12 provides a summary of factors that companies consider when deciding between the extremes of FIFO and LIFO. Some of these factors were demonstrated with the ZenLife comparison analysis in Illustration 7.11.

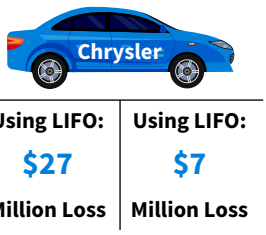
As you can see, company managers have many factors to consider when deciding which inventory cost flow method to use. But there is one requirement that must be followed. If a company uses LIFO for the tax benefit of paying less income tax, then it must also use LIFO for financial reporting purposes. This requirement is referred to as the **LIFO conformity rule**. Essentially, if the company wants to take advantage of lower taxes, it must also report lower income and inventory in its financial statements.

Companies are allowed to combine inventory methods. For example, **John Deere** uses LIFO for most of its inventories and prices the remainder using FIFO. Although a company may use a variety of inventory methods to assist in accurate computation of net income, once it selects a costing method, it must apply it consistently thereafter. If conditions indicate that

ILLUSTRATION 7.12 Factors to Consider when Deciding Between FIFO and LIFO

Factors	FIFO	LIFO
Physical flow of goods	• Typically, companies like to sell older goods first, so FIFO may mirror the actual flow of goods. • For example, grocery stores want to sell older produce and dairy items before they spoil.	• Typically, goods are not sold on a LIFO basis except in specific situations. Therefore, LIFO generally does not mirror the actual flow of goods. • For example, a coal pile is a unique situation. The last coal poured on top will be the first coal to be removed. The coal remover is not going to take coal from the bottom of the pile.
Income tax effects	• In periods of **rising** inventory costs, FIFO results in higher income taxes. • Higher tax payments reduce cash flows.	• In periods of **rising** inventory costs, LIFO results in lower income taxes. • Lower income taxes owed translates to a true cash savings. **This is often seen as the biggest advantage of LIFO.**[6]
Earnings impact	• In periods of **rising** inventory costs, FIFO results in higher reported earnings, which is pleasing to investors and the company's stock price. • Corporate managers may prefer to have higher reported profits than lower taxes.	• In periods of **rising** inventory costs, LIFO results in lower reported earnings, which may not be pleasing to investors and may negatively impact the company's stock price. • Corporate managers may prefer to have lower taxes to conserve cash than to have higher reported profits.
Matching of revenues and current costs on the income statement	• Results in poor matching because older inventory costs (first in) are matched against current revenue. • As shown in Illustration 7.11, a company appears more profitable under FIFO, but it is a "paper profit" or an "inventory profit."	• Results in better matching because recent inventory costs (last in) are matched against current selling price. • As shown in Illustration 7.11, LIFO reduces or eliminates the "paper profit" or the "inventory profit."
Inventory on the balance sheet	• Reflects current inventory costs because the old items (first in) are assumed to be sold. • This can be a disadvantage because the inventory is more vulnerable to declines in value, which can lead to a substantial write-down. • This can be an advantage because the more recent costs in inventory boosts the company's working capital position.	• Reflects old inventory costs because the new items (last in) are assumed to be sold. • This can be an advantage because it substantially minimizes write-downs to market if inventory value declines. • This can be a disadvantage because the old costs in inventory makes the working capital position of the company appear worse than it is.

the inventory costing method in use is unsuitable, the company must seriously consider all other possibilities before selecting another method and it should clearly explain any change and disclose its effect in the financial statements.



Switching Inventory Methods

Can a company switch from FIFO to LIFO, or from LIFO to FIFO? Yes it can, but switching will trigger tax consequences. For example, when **Chrysler** changed from LIFO to FIFO, it became responsible for an additional $53 million in taxes that the company had deferred

[6] A study [D. Tinkelman, "Who Benefits from LIFO?" *Tax Notes* (December 2017)] of all public companies documented that less than 10% of large and small companies use LIFO, a decline from nearly 30% in 1985. Because of steady or falling raw materials costs and costs savings from electronic data interchange and just-in-time technologies in recent years, many businesses using LIFO no longer experience substantial tax benefits. Even some companies for which LIFO is creating a benefit are finding that the administrative costs associated with LIFO are higher than the LIFO benefit obtained. As a result, some companies are moving to FIFO or average-cost.

over 14 years of LIFO inventory valuation. Why, then, would Chrysler, and other companies, change to FIFO? The major reason was the profit crunch of that era. Although Chrysler showed a loss of $7.6 million after the switch, the loss would have been **$20 million more** if the company had not changed its inventory valuation from LIFO to FIFO.

The concern about reduced income resulting from adoption of LIFO has even less substance now because the IRS has relaxed restrictions against providing non-LIFO income numbers as supplementary information. As a result, companies now provide supplemental non-LIFO disclosures. While not intended to override the basic LIFO method adopted for financial reporting, these disclosures may be useful in comparing operating income and working capital with companies not using LIFO. For example, **Sherwin-Williams Company**, a LIFO user, presented the information in its annual report as shown in **Illustration 7.13**.

ILLUSTRATION 7.13
Supplemental Non-LIFO Disclosure

Sherwin-Williams Company

Note 4—Inventories ($,000) The following table summarizes the extent to which the Company's Inventories use the LIFO cost method, and presents the effect on Inventories had the Company used the first-in, first-out (FIFO) inventory valuation method.

	2020	2019
Percentage of total inventories on LIFO	72%	72%
Excess of FIFO over LIFO	$312,100	$339,800

Accounting Matters — The Itch to Switch?

LIFO has a lot going for it in terms of tax savings and providing an income number that better reflects the gross profit associated with inventories with different historical costs. While many believe that LIFO provides a more useful income measure, other methods, such as FIFO and average-cost, better reflect the current value of inventory on the balance sheet. Here are some reasons why companies have not adopted LIFO.

- Many companies discontinued LIFO use to support uniformity of inventory valuation across operations. That is, companies were using LIFO in their U.S. operations but FIFO and/or average-cost in international units. The switch from LIFO simplifies the external reporting for these multinational companies.
- The recent periods of low inflation have resulted in less significant tax benefits associated with LIFO use. That is, in times of rising costs, by expensing the most recently purchased items, cost of goods sold is higher (compared to FIFO or average-cost) and taxable income is lower. Indeed, a number of companies do not believe the smaller tax benefits of LIFO offset the costs.
- Finally, the companies most resistant to make the switch from LIFO are those with large inventory balances. That is, the higher the inventory balance, the higher the additional tax payment will be upon the switch to FIFO. However, a growing number of companies have implemented just-in-time (JIT) or other lean manufacturing techniques, under which much lower inventories are kept on hand. In the extreme, JIT leads to zero inventory and no LIFO effect relative to other methods. For example, **JC Penney** recently switched from LIFO to FIFO in the same period that it rolled out its "door-to-floor" lean inventory strategy. As a result, the accounting effect of the change to FIFO was immaterial.

In summary, the merits of LIFO use (about which you have learned in this chapter) are many. However, these benefits appear to be waning. We expect more companies to consider a voluntary switch away from LIFO in the future.

Sources: Adapted from Shumsky, "Oil Price Rally, Accounting Method Push Down Oil Inventories," *Wall Street Journal* (December 14, 2016); and D. P. Tinkelman and C. E. I. Tan, "Estimating the Potential Revenue Impact of Taxing LIFO Reserves in the Current Low Commodity Price Environment," *Journal of the American Tax Association* (January 2018).

Put It into Practice LO 7.3

Compute Inventory Using Cost Flow Assumptions

FACTS Harper Company uses a periodic inventory system. The following information is available for June, when the company sold 1,200 units.

Date	Units	Unit Cost	Total Cost
Beginning inventory			$ 0
June 1 inventory	500	$7	3,500
June 12 purchase	800	8	6,400
June 25 purchase	700	9	6,300
	2,000		$16,200

INSTRUCTIONS

Compute the cost of goods sold for the month of June and the June 30 ending inventory using each of the following methods.

a. Average-cost.

b. FIFO.

c. LIFO.

SOLUTION

If the company sold 1,200 units, that means 800 are left in ending inventory (2,000 – 1,200).

a. Average-cost method:

Date	Units	Unit Cost	Total Cost
June 1	500	$7	$ 3,500
June 12	800	8	6,400
June 25	700	9	6,300
Goods available for sale	2,000		$16,200

Weighted-average cost per unit = $16,200 ÷ 2,000 = $8.10
Ending inventory = (2,000 – 1,200) × $8.10 = $6,480
Cost of goods sold = 1,200 × $8.10 = $9,720

b. FIFO method:

Date	Units	Unit Cost	Total Cost
June 25	700	$9	$6,300
June 12	100	8	800
Ending inventory	800		$7,100

Date	Units	Unit Cost	Total Cost
June 1 inventory	500	$7	$ 3,500
June 12 purchase	700	8	5,600
Cost of goods sold	1,200		$ 9,100

c. LIFO method:

Date	Units	Unit Cost	Total Cost
June 1	500	$7	$3,500
June 12	300	8	2,400
Ending inventory	800		$5,900

Date	Units	Unit Cost	Total Cost
June 12 purchase	500	$8	$ 4,000
June 25 purchase	700	9	6,300
Cost of goods sold	1,200		$10,300

7.4 Special Issues Related to LIFO

LEARNING OBJECTIVE 4

Identify special issues related to LIFO.

LIFO Reserve

Companies that use LIFO for tax and external reporting purposes often maintain a FIFO or average-cost system for internal reporting purposes. They do this for several reasons.

1. Companies often base their sales pricing decisions on a FIFO or average-cost assumption, rather than on a LIFO basis.
2. Recordkeeping on some other basis is easier because the LIFO assumption usually does not approximate the physical flow of the product.
3. Profit-sharing and other bonus arrangements often depend on a non-LIFO inventory assumption.
4. The use of a pure LIFO system is troublesome for interim periods, which require estimates of year-end quantities and prices.

At the end of a period when it's time to prepare financial statements, a company makes an entry to adjust the internal reporting system to the LIFO amounts for ending inventory and cost of goods sold. Companies use an allowance account to record this adjustment, rather than adjusting the inventory account directly.

- The allowance account is called the Allowance to Reduce Inventory to LIFO account, also referred to as the **LIFO reserve**. The balance in this allowance account is carried forward each year and adjusted as necessary.
- The **change** in the allowance balance from one period to the next is called the **LIFO effect**.

Example 7.9 LIFO Reserve/LIFO Effect

Allowance to Reduce Inventory to LIFO

	Beg. bal.	20,000
		30,000
	End. bal.	50,000

FACTS Acme Boot Company uses the FIFO method for internal reporting purposes and LIFO for external reporting purposes. At January 1, 2025, the Allowance to Reduce Inventory to LIFO balance is $20,000. At December 31, 2025, Acme's trial balance shows an inventory value of $850,000 under FIFO while LIFO inventory is $800,000.

QUESTION What entry would you make to record the LIFO effect?

SOLUTION

Acme Boot must report an ending balance in its Allowance to Reduce Inventory to LIFO account of $50,000 ($850,000 − $800,000). Acme Boot adjusts the allowance for the LIFO effect of $30,000 ($50,000 − $20,000) and makes the following entry at year-end.

Cost of Goods Sold	30,000	
Allowance to Reduce Inventory to LIFO		30,000

On the December 31, 2025, balance sheet, Acme Boot deducts Allowance to Reduce Inventory to LIFO from inventory to ensure that it states the inventory on a LIFO basis at year-end.

In the notes to the financial statements, companies generally should disclose the LIFO reserve, as shown in **Illustration 7.14**. [7]

ILLUSTRATION 7.14 Note Disclosures of LIFO Reserve

Caterpillar Inc.
(in millions)

Inventories	Current Year	Previous Year
	$11,402	$11,266

Note 1 (partial): Inventories We state inventories at the lower of cost or net realizable value. We principally determine cost using the last-in, first-out (LIFO) method. If the FIFO (first-in, first-out) method had been in use, inventories would have been $2,132 million and $2,086 million higher than reported in the current and prior year, respectively.

Investors commonly use the current ratio (current assets divided by current liabilities) to evaluate a company's liquidity. A higher current ratio indicates that a company is better able to meet its current obligations when they come due. It is not meaningful to compare the current ratio for a company using LIFO to one for a company using FIFO. It would be like comparing apples to oranges since the two companies measure inventory and cost of goods sold differently.

Analysts therefore use the following adjustment to make information reported by LIFO companies comparable to the information provided by FIFO companies.

Inventory Adjustment: LIFO Inventory + LIFO Reserve = FIFO Inventory

For cost of goods sold, deduct the change in the LIFO reserve (the LIFO effect) from the LIFO cost of goods sold to yield the comparable FIFO cost of goods sold.

Example 7.10
LIFO Reserve Adjustment

FACTS Refer to Illustration 7.14 for information about **Caterpillar**'s inventory. The company has current assets of $39,464 million and current liabilities of $25,717 million.

QUESTION Using Illustration 7.14 and the above information, what is Caterpillar's current ratio after adjusting for the LIFO reserve?

SOLUTION

For Caterpillar, the current ratio using LIFO is $39,464 ÷ $25,717 = 1.5. After adjusting for the LIFO effect, Caterpillar's current ratio under FIFO would be ($39,464 + $2,132) ÷ $25,717 = 1.6. Without the LIFO adjustment, Caterpillar's current ratio is lower.

LIFO Liquidation

Up to this point, we have emphasized a **specific-goods approach** to costing LIFO inventories (also called **traditional LIFO** or **unit LIFO**). This approach is often unrealistic for two reasons.

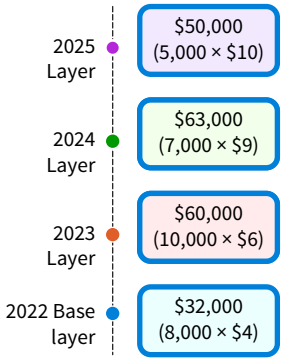
1. When a company has many different inventory items, the accounting cost of tracking each inventory item is expensive.

2. A rapid decline in a company's LIFO inventory levels can occur. This results in considerably older inventory being matched with current revenues which distorts net income and leads to substantial tax payments. This situation is called **LIFO liquidation**.

To understand the LIFO liquidation problem, assume that Basler Co. has 30,000 pounds of steel in its inventory on December 31, 2025, with cost determined on a specific-goods LIFO approach.

Ending Inventory (2025)			
	Pounds	**Unit Cost**	**LIFO Cost**
2022	8,000	$ 4	$ 32,000
2023	10,000	6	60,000
2024	7,000	9	63,000
2025	5,000	10	50,000
	30,000		$205,000

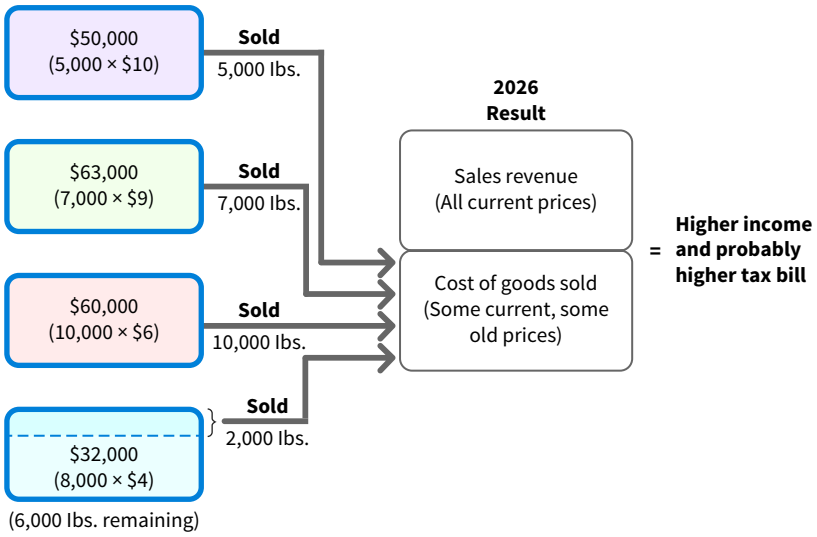
ILLUSTRATION 7.15 Layers of LIFO Inventory



The ending 2025 inventory for Basler consists of costs from past periods. These costs are called **layers** (increases from period to period). The first layer, 2022, is identified as the base layer. **Illustration 7.15** shows the layers for Basler.

Note the increased price of steel over the four-year period, which means outdated costs are included in the 2025 ending inventory balance. In 2026, due to metal shortages, Basler had to sell off, or liquidate, much of its inventory (a LIFO liquidation). At the end of 2026, only 6,000 pounds of steel remained in inventory. Because the company uses LIFO, Basler liquidates the most recent layer, 2025, first, followed by the 2024 layer, and so on. The result: Basler matches costs from preceding periods against sales revenues reported in current dollars. As **Illustration 7.16** shows, this leads to a distortion in net income and increased taxable income in the current period.

ILLUSTRATION 7.16 LIFO Liquidation


$50,000 (5,000 × $10)
Sold 5,000 lbs.
$63,000 (7,000 × $9)
Sold 7,000 lbs.
$60,000 (10,000 × $6)
Sold 10,000 lbs.
Sold 2,000 lbs.
$32,000 (8,000 × $4)
(6,000 lbs. remaining)
2026 Result
Sales revenue (All current prices)
Cost of goods sold (Some current, some old prices)
= Higher income and probably higher tax bill

Unfortunately, **LIFO liquidations can occur frequently when using a specific-goods LIFO approach**. To alleviate the LIFO liquidation problems and to simplify the accounting, companies can combine goods into pools.

- A **pool** groups items of a similar nature. Instead of only identical units, a company combines, and counts as a group, a number of similar units or products.
- This method, the **specific-goods pooled LIFO approach**, usually results in fewer LIFO liquidations. Why? Because the reduction of one quantity in the pool may be offset by an increase in another.[7]

[7]Companies should disclose the effects on income of LIFO inventory liquidations in the notes to the financial statements. [8]

The specific-goods pooled LIFO approach eliminates some of the disadvantages of the specific-goods (traditional) accounting for LIFO inventories. However, this pooled approach, using quantities as its measurement basis, creates two main problems:

1. Most companies continually change the mix of their products, materials, and production methods. As a result, in employing a pooled approach using quantities, companies must continually redefine the pools. This can be time-consuming and costly.
2. Even when practical, the approach often results in an "erosion" (LIFO liquidation) of the layers, thereby losing much of the LIFO costing benefit. Erosion of the layers occurs when a specific good or material in the pool is replaced with another good or material. The new item may not be similar enough to be treated as part of the old pool. Therefore, a company may need to recognize any inflationary profit deferred on the old goods as it replaces them.

Dollar-Value LIFO

The dollar-value LIFO method overcomes the problems of redefining pools and eroding layers. **The dollar-value LIFO method determines and measures any increases and decreases in a pool in terms of total dollar value, not the physical quantity of the goods in the inventory pool.** Such an approach has two important advantages over the specific-goods pooled approach.

1. Companies may include a broader range of goods in a dollar-value LIFO pool.
2. A dollar-value LIFO pool permits replacement of goods that are similar items, similar in use, or interchangeable. (In contrast, a specific-goods LIFO pool only allows replacement of items that are substantially identical.)

Example 7.11
Dollar-Value LIFO

FACTS Enrico Company first adopts dollar-value LIFO on December 31, 2024 (base period). The inventory at current prices on that date was $20,000. The inventory on December 31, 2025, at current prices is $26,400.

QUESTION Can we conclude that Enrico's inventory quantities increased 32% during the year ($26,400 ÷ $20,000 = 132%)?

SOLUTION

To answer this question, we need to do the following.

1. **Determine the value of the ending inventory in terms of beginning-of-the-year prices.** Assuming that prices have increased 20% during the year, the ending inventory at beginning-of-the-year prices amounts to $22,000 ($26,400 ÷ 1.20). Therefore, the inventory quantity has increased only 10%, or from $20,000 to $22,000 in terms of beginning-of-the-year prices.
2. **Price this real-dollar quantity increase.** This real-dollar quantity increase of $2,000 valued at year-end prices is $2,400 (1.20 × $2,000). This increment (layer) of $2,400, when added to the beginning inventory of $20,000, totals $22,400 for the December 31, 2025, inventory, as follows.

First layer—(beginning inventory) in terms of 100	$20,000
Second layer—(2025 increase) in terms of 120	2,400
Dollar-value LIFO inventory, December 31, 2025	$22,400

Note that a layer forms only when the ending inventory at base-year prices exceeds the beginning inventory at base-year prices. Only when a new layer forms must Enrico compute a new index.

Therefore, dollar-value LIFO techniques help protect LIFO layers from erosion. Because of this advantage, companies frequently use the dollar-value LIFO method in practice. Companies use the more traditional LIFO approaches only when dealing with few goods and expecting little change in product mix.

Under the dollar-value LIFO method, one pool may contain the entire inventory. However, companies generally use several pools.[8] In general, the following holds true.

- The more goods included in a pool, the more likely that increases in the quantities of some goods will offset decreases in other goods in the same pool which avoids liquidation of the LIFO layers.
- Fewer pools means less cost and less chance of a reduction of a LIFO layer.[9]

Comprehensive Dollar-Value LIFO Example

To illustrate the use of the dollar-value LIFO method in a more complex situation, assume that Monarch Company develops the following information.

December 31		Inventory at End-of-Year Prices	÷ Price Index (percentage)	= End-of-Year Inventory at Base-Year Price
(Base year)	2022	$200,000	100	$200,000
	2023	299,000	115	260,000
	2024	300,000	120	250,000
	2025	351,000	130	270,000

At December 31, 2022, Monarch computes the ending inventory under dollar-value LIFO as $200,000, as **Illustration 7.17** shows.

ILLUSTRATION 7.17
Computation of 2022 Inventory at LIFO Cost

Ending Inventory at Base-Year Prices	Layer at Base-Year Prices	× Price Index (percentage)	= Ending Inventory at LIFO Cost
$200,000	$200,000	× 100	= $200,000

At December 31, 2023, a comparison of the ending inventory at base-year prices ($260,000) with the beginning inventory at base-year prices ($200,000) indicates that the quantity of goods (in base-year prices) increased $60,000 ($260,000 − $200,000).

- Monarch prices this increment (layer) at the 2023 index of 115% to arrive at a new layer of $69,000.
- Ending inventory for 2023 is $269,000, composed of the beginning inventory of $200,000 and the new layer of $69,000.

[8]A survey of companies reported that the vast majority of respondent companies applying LIFO use the dollar-value method or the dollar-value retail method to apply LIFO. Only a small minority of companies use the specific-goods (unit LIFO) approach or the specific-goods pooling approach. In addition, most companies have only a few pools—the median is six for retailers and three for nonretailers. Retailers that use LIFO have significantly more pools than nonretailers. About a third of the nonretailers (mostly manufacturers) use a single pool for their entire LIFO inventory. See J.M. Reeve and K.G. Stanga, "The LIFO Pooling Decision," *Accounting Horizons* (June 1987), p. 27.

[9]One study shows that when quantities are increasing, multiple pools over a period of time may produce (under rather general conditions) significantly higher cost of goods sold deductions than a single-pool approach. When a stock-out occurs, a single-pool approach may lessen the layer liquidation for that year, but it may not erase the cumulative cost of goods sold advantage accruing to the use of multiple pools built up over the preceding years. See William R. Coon and Randall B. Hayes, "The Dollar Value LIFO Pooling Decision: The Conventional Wisdom Is Too General," *Accounting Horizons* (December 1989), pp. 57–70.

Illustration 7.18 shows the computations.

Ending Inventory at Base-Year Prices		Layers at Base-Year Prices		Price Index (percentage)		Ending Inventory at LIFO Cost
$260,000	2022	$200,000	×	100	=	$200,000
	2023	60,000	×	115	=	69,000
		$260,000				$269,000

ILLUSTRATION 7.18
Computation of 2023 Inventory at LIFO Cost

At December 31, 2024, a comparison of the ending inventory at base-year prices ($250,000) with the beginning inventory at base-year prices ($260,000) indicates a decrease in the quantity of goods of $10,000 ($250,000 − $260,000).

① If the ending inventory at base-year prices is less than the beginning inventory at base-year prices, a company must subtract the decrease from the most recently added layer.

② When a decrease occurs, the company "peels off" previous layers at the prices in existence when it added the layers.

In Monarch's situation, this means that it removes $10,000 in base-year prices from the 2023 layer of $60,000 at base-year prices. It values the balance of $50,000 ($60,000 − $10,000) at base-year prices at the 2023 price index of 115%. As a result, it now values this 2023 layer at $57,500 ($50,000 × 1.15). Therefore, Monarch computes the ending inventory at $257,500, consisting of the beginning inventory of $200,000 and the second layer of $57,500. **Illustration 7.19** shows the computations for 2024.

Ending Inventory at Base-Year Prices		Layers at Base-Year Prices		Price Index (percentage)		Ending Inventory at LIFO Cost
$250,000	2022	$200,000	×	100	=	$200,000
	2023	50,000	×	115	=	57,500
		$250,000				$257,500

ILLUSTRATION 7.19
Computation of 2024 Inventory at LIFO Cost

Note that if Monarch eliminates a layer or base (or portion thereof), it cannot rebuild it in future periods. That is, the layer is gone forever.

At December 31, 2025, a comparison of the ending inventory at base-year prices ($270,000) with the beginning inventory at base-year prices ($250,000) indicates an increase in the quantity of goods (in base-year prices) of $20,000 ($270,000 − $250,000). After converting the $20,000 increase, using the 2025 price index, the ending inventory is $283,500, composed of the beginning layer of $200,000, a 2023 layer of $57,500, and a 2025 layer of $26,000 ($20,000 × 1.30). **Illustration 7.20** shows this computation.

Ending Inventory at Base-Year Prices		Layers at Base-Year Prices		Price Index (percentage)		Ending Inventory at LIFO Cost
$270,000	2022	$200,000	×	100	=	$200,000
	2023	50,000	×	115	=	57,500
	2025	20,000	×	130	=	26,000
		$270,000				$283,500

ILLUSTRATION 7.20
Computation of 2025 Inventory at LIFO Cost

The ending inventory at base-year prices must always equal the total of the layers at base-year prices. Checking that this situation exists will help to ensure correct dollar-value computations.

Selecting a Price Index

Obviously, price changes are critical in dollar-value LIFO. How do companies determine the price indexes?

- Many companies use the general price-level index that the federal government prepares and publishes each month. The most popular general external price-level index is the **Consumer Price Index for Urban Consumers** (CPI-U).[10]
- Companies also use more-specific external price indexes. For instance, various organizations compute and publish daily indexes for most commodities (gold, silver, other metals, corn, wheat, and other farm products). Many trade associations prepare indexes for specific product lines or industries.

Any of these indexes may be used for dollar-value LIFO purposes.

When a relevant specific external price index is not readily available, a company may compute its own specific internal price index. The desired approach is to price ending inventory at the most current cost, known as the **double-extension method**. As its name implies, the value of the units in inventory is extended at **both** base-year prices and current-year prices.

Therefore, a company that chose to compute its own specific internal price index would ordinarily determine current cost by referring to the actual cost of the goods most recently purchased. The price index provides a measure of the change in price or cost levels between the base year and the current year. The company then computes the index for each year after the base year. The general formula for computing the index is as shown as follows.

$$\frac{\text{Ending Inventory for the Period at Current Cost}}{\text{Ending Inventory for the Period at Base-Year Cost}} = \text{Price Index for Current Year}$$

Example 7.12
Double-Extension Method

FACTS Sweet Sock Company's base-year inventory (January 1, 2025) consisted of the following.

Items	Quantity	Cost per Unit	Total Cost
Wool	1,000	$ 6	$ 6,000
Cashmere	2,000	20	40,000
January 1, 2025, inventory at base-year costs			$46,000

Examination of the ending inventory indicates that the company holds 3,000 pairs of wool socks and 6,000 pairs of cashmere socks on December 31, 2025. The most recent actual purchases related to these items were as follows.

Items	Purchase Date	Quantity Purchased	Cost per Unit
Wool	December 1, 2025	4,000	$ 7
Cashmere	December 15, 2025	5,000	25
Cashmere	November 16, 2025	1,000	22

QUESTION How does Sweet Sock double-extend its inventory?

[10]Indexes may be **general** (composed of several commodities, goods, or services) or **specific** (for one commodity, good, or service). Additionally, they may be **external** (computed by an outside party, such as the government, commodity exchange, or trade association) or **internal** (computed by the enterprise for its own product or service).

SOLUTION

Sweet Sock double-extends the inventory as follows.

	12/31/25 Inventory at Base-Year Costs			12/31/25 Inventory at Current-Year Costs		
Items	Units	Base-Year Cost per Unit	Total	Units	Current-Year Cost per Unit	Total
Wool	3,000	$ 6	$ 18,000	3,000	$ 7	$ 21,000
Cashmere	6,000	20	120,000	5,000	25	125,000
Cashmere				1,000	22	22,000
			$138,000			$168,000

After the inventories are double-extended, Sweet Sock calculates the index for the current year (2025) as follows.

$$\frac{\text{Ending Inventory for the Period at Current Cost}}{\text{Ending Inventory for the Period at Base-Year Cost}} = \frac{\$168,000}{\$138,000} = 121.74\%$$

As indicated in Example 7.12, Sweet Sock then applies this index (121.74%) to the layer added in 2025. Note in this example that Sweet Sock used the most recent actual purchases to determine current cost. Alternatively, it could have used other approaches such as FIFO and average-cost. Whichever flow assumption is adopted, a company must use it consistently from one period to another.

Use of the double-extension method is time-consuming and difficult where substantial technological change has occurred or where many items are involved. That is, as time passes, the company must determine a new base-year cost for new products and must keep a base-year cost for each inventory item.[11]

Comparison of LIFO Approaches

We present three different approaches to computing LIFO inventories in this chapter—specific-goods LIFO, specific-goods pooled LIFO, and dollar-value LIFO. Here are some quick reminders about each one:

1. **The use of the specific-goods LIFO is unrealistic**. Most companies have numerous goods in inventory at the end of a period. Costing them on a unit basis is extremely expensive and time-consuming.
2. **The specific-goods pooled LIFO approach reduces recordkeeping and clerical costs**. In addition, it is more difficult to erode the layers because the reduction of one quantity in the pool may be offset by an increase in another. Nonetheless, the pooled approach using **quantities** as its measurement basis can lead to untimely LIFO liquidations.
3. **Most companies using a LIFO system employ dollar-value LIFO.** This is because of the disadvantages of the specific-goods LIFO and specific-goods pooled LIFO approaches. Although the dollar-value LIFO approach appears complex, the logic and the computations are actually quite simple, after determining an appropriate index.

However, problems do exist with the dollar-value LIFO method. The primary issue is that selection of the items to be put in a pool can be subjective and lead to income manipulation.

[11]To simplify the analysis, companies may use another approach, initially sanctioned by the IRS for tax purposes. Under this method, a company obtains an index from an outside source or by double-extending only a sample portion of the inventory. For example, the IRS allows all companies to use as their inflation rate for a LIFO pool as 80% of the inflation rate reported by the appropriate consumer or producer price indexes prepared by the Bureau of Labor Statistics (BLS). Once the company obtains the index, it divides the ending inventory at current cost by the index to find the base-year cost. Using generally available external indexes greatly simplifies LIFO computations, and frees companies from having to compute internal indexes.

To curb this practice, the SEC has taken a much harder line on the number of pools that companies may establish. In a well-publicized case, **Stauffer Chemical Company** increased the number of LIFO pools from 8 to 280, boosting its net income by $16,515,000 or approximately 13%. Stauffer justified the change in its annual report on the basis of "achieving a better matching of cost and revenue." The SEC required Stauffer to reduce the number of its inventory pools, contending that some pools were inappropriate and alleging income manipulation.

Put It into Practice LO 7.4
Use the Dollar-Value LIFO Method

FACTS Truman Company uses the dollar-value LIFO method of computing its inventory. Inventory for the last three years is as follows.

Year Ended December 31	Inventory at Current-Year Cost	Price Index
2023	$60,000	100
2024	84,000	105
2025	87,000	116

INSTRUCTIONS

What are the values of the 2023, 2024, and 2025 inventories using the dollar-value LIFO method?

SOLUTION

Year	Inventory at End-of-Year Prices	Inventory at Base-Year Prices	Layers at Base-Year Prices	×	Price-Index Layers at LIFO Cost	Dollar-Value LIFO Inventory
2023	$60,000	$60,000 ÷ 100 = $60,000	2023 $60,000	×	100 = $60,000	$60,000
2024	84,000	$84,000 ÷ 105 = $80,000	2023 $60,000	×	100 = $60,000	
			2024 20,000	×	105 = $21,000	$81,000
2025	87,000	$87,000 ÷ 116 = $75,000	2023 $60,000	×	100 = $60,000	
			2024 15,000	×	105 = $15,750	$75,750

As indicated, consistent with LIFO costing in times of rising prices, the dollar-value LIFO inventory amount is less than inventory stated at end-of-year prices. The company did not add layers at the 2025 prices. This is because the increases in inventory at end-of-year (current) prices was due to higher prices. Also establishing the LIFO layers based on price adjusted dollars relative to base year layers reduces the likelihood of a LIFO liquidation; thereby preserving the tax cash flow benefits of using LIFO.

7.5 Effect of Inventory Errors

LEARNING OBJECTIVE 5

Determine the effects of inventory errors on the financial statements.

Items incorrectly included or excluded in determining cost of goods sold through inventory misstatements will result in errors in the financial statements. We next look at two cases, assuming a **periodic inventory system**.

Ending Inventory Misstated

What would happen if **IBM** correctly records its beginning inventory and purchases, but fails to include some items in ending inventory? Recall the cost of goods sold formula: Goods

available for sale minus ending inventory equals cost of goods sold. If ending inventory is understated (too small), then the resulting cost of goods sold will be overstated (too large). **Illustration 7.21** shows the effects on the financial statements at the end of the period.

Balance Sheet		Income Statement	
Inventory	Understated	Cost of goods sold	Overstated
Retained earnings	Understated		
Working capital	Understated	Net income	Understated
Current ratio	Understated		

ILLUSTRATION 7.21 Financial Statement Effects of Understated Ending Inventory

If ending inventory is understated, working capital (current assets less current liabilities) and the current ratio (current assets divided by current liabilities) are understated. If cost of goods sold is overstated, then net income is understated.

To illustrate the effect on net income over a two-year period (2024–2025), assume that **GameStart** understates its ending inventory by $10,000 in 2024; all other items are correctly stated. The effect of this error is to decrease net income in 2024 and to increase net income in 2025. The error is counterbalanced (offset) in 2025 because beginning inventory is understated and net income is overstated. As **Illustration 7.22** shows, the income statement misstates the net income figures for both 2024 and 2025 although the **total** for the two years is correct.

GameStart
(assumed data)

	Incorrect Recording		Correct Recording	
	2024	2025	2024	2025
Revenues	$100,000	$100,000	$100,000	$100,000
Cost of goods sold				
Beginning inventory	25,000	20,000	25,000	30,000
Purchased or produced	45,000	60,000	45,000	60,000
Goods available for sale	70,000	80,000	70,000	90,000
Less: Ending inventory	20,000*	40,000	30,000	40,000
Cost of goods sold	50,000	40,000	40,000	50,000
Gross profit	50,000	60,000	60,000	50,000
Administrative and selling expenses	40,000	40,000	40,000	40,000
Net income	$ 10,000	$ 20,000	$ 20,000	$ 10,000
	Total income for two years = $30,000		Total income for two years = $30,000	

*Ending inventory understated by $10,000 in 2024.

ILLUSTRATION 7.22 Effect of Ending Inventory Error on Two Periods

If GameStart **overstates** ending inventory in 2024, the reverse effect occurs. Inventory, working capital, current ratio, and net income are overstated, and cost of goods sold is understated. The effect of the error on net income will be counterbalanced in 2025, but the income statement misstates both years' net income figures.

Purchases and Inventory Misstated

Suppose that GameStart does not record as a purchase certain goods that it owns and does not count them in ending inventory. The effect on the financial statements (assuming this is a purchase on account) is shown in **Illustration 7.23**.

ILLUSTRATION 7.23 Financial Statement Effects of Understated Purchases and Ending Inventory

Balance Sheet		Income Statement	
Inventory	Understated	Purchases	Understated
Retained earnings	No effect	Cost of goods sold	No effect
Accounts payable	Understated	Net income	No effect
Working capital	No effect	Inventory(ending)	Understated
Current ratio	Overstated		

Omission of goods from purchases and ending inventory results in an understatement of inventory and accounts payable in the balance sheet. It also results in an understatement of purchases and ending inventory in the income statement. However, the omission of such goods does not affect net income for the period. Why not? Because GameStart understates both purchases and ending inventory by the same amount—the error is thereby offset in cost of goods sold. Total working capital is unchanged, but the current ratio is overstated because of the omission of equal amounts from inventory and accounts payable.

To illustrate the effect on the current ratio, assume that GameStart **understated** accounts payable and ending inventory by $40,000. **Illustration 7.24** shows the understated and correct data.

ILLUSTRATION 7.24 Effects of Purchases and Ending Inventory Errors

Purchases and Ending Inventory Understated		Purchases and Ending Inventory Correct	
Current assets	$120,000	Current assets	$160,000
Current liabilities	40,000	Current liabilities	80,000
Current ratio	3 to1	Current ratio	2 to1

The understated data indicate a current ratio of 3 to 1, whereas the correct ratio is 2 to 1. Thus, understatement of accounts payable and ending inventory can lead to a "window-dressing" of the current ratio. That is, GameStart can make the current ratio appear better than it is.

If GameStart **overstates** both purchases (on account) and ending inventory, then the effects on the balance sheet are exactly the reverse. The financial statements overstate inventory and accounts payable and understate the current ratio. The overstatement does not affect cost of goods sold and net income because the errors offset one another. Similarly, working capital is not affected.

Underlying Concepts

When inventory is misstated, its presentation is not representationally faithful.

We cannot overemphasize the importance of proper inventory measurement in presenting accurate financial statements (see **Underlying Concepts**). **Illustration 7.25** highlights the effects of inventory errors.

ILLUSTRATION 7.25 Inventory Errors

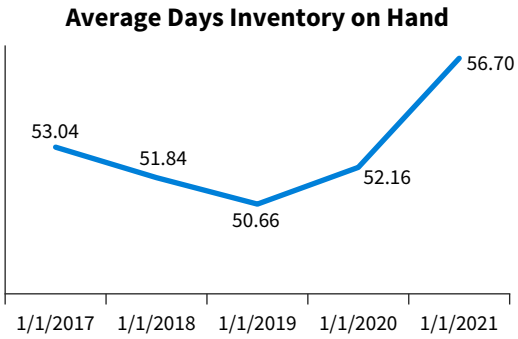
Company	Nature of Error
Leslie Fay	Had accounting irregularities that wiped out one year's net income and caused a restatement of the prior year's earnings. One reason: It inflated inventory and deflated cost of goods sold.
Anixter Bros. Inc.	Had to restate its income by $1.7 million because an accountant in the antenna manufacturing division overstated the ending inventory, thereby reducing its cost of sales.
AM International	Allegedly recorded as sold products that were only being rented. As a result, inaccurate inventory and sales figures inappropriately added $7.9 million to pretax income.

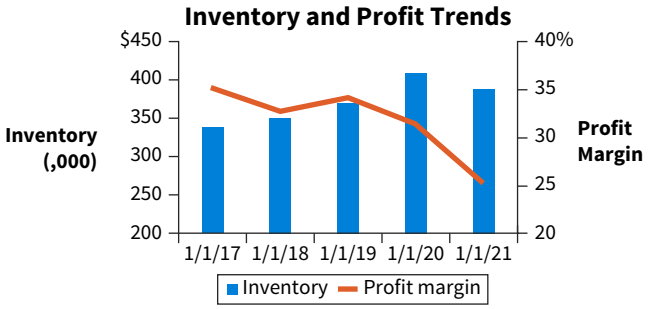
Analytics in Action: Inventory Matters

Effective inventory management is key to a company's success, especially in the retail industry. At retailer **Urban Outfitters**, the CFO reviews metrics on inventory supply by brand, channel, and category at least weekly.

As you now know, inventory is one of the largest components of retailers' current assets. Until the inventory is sold, a retailer must carry the cost of holding the inventory, including the risk of changing trends and potential obsolescence. Some retailers are looking to become more agile by ordering smaller amounts of inventory from their suppliers, selling less but charging more.

Any inventory strategy hinges on a significant amount of data for management to monitor on a regular basis. The adjacent charts are some common inventory-related metrics for Urban Outfitters. Reviewing metrics to identify trends, issues, and opportunities is imperative for management. Using data provided from the accounting system, management can get detailed daily snapshots of their most important inventory metrics.





Sources: "Urban Outfitters Navigates Inventory Challenges Amid Pandemic," *Wall Street Journal* (September 8, 2020); and "Less Is More, Retail CFOs Find as They Plot Post-Pandemic Strategy," *Wall Street Journal* (June 1, 2021).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Review and Practice

Key Terms Review

average-cost method 7-16
consigned goods 7-9
cost of goods available for sale 7-4
cost of goods sold 7-4
dollar-value LIFO 7-27
double-extension method 7-30
finished goods inventory 7-2
first-in, first-out (FIFO) method 7-17
f.o.b. destination 7-9
f.o.b. shipping point 7-9
gross method 7-12
inventories 7-2
last-in, first-out (LIFO) method 7-18
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specific identification 7-15
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work in process inventory 7-2

Learning Objectives Review

1 Identify inventory classifications and different inventory systems.

Only one inventory account, Inventory, appears in the financial statements of a merchandising concern. A manufacturer normally has three inventory accounts: Raw Materials, Work in Process, and Finished Goods. Companies report the cost assigned to goods and materials on hand but not yet placed into production as raw materials inventory. They report the cost of the raw materials on which production has been started but not completed, plus the direct labor cost applied specifically to this material and a ratable share of manufacturing overhead costs, as work in process inventory.

Finally, they report the costs identified with the completed but unsold units on hand at the end of the fiscal period as finished goods inventory.

A **perpetual inventory system** maintains a continuous record of inventory changes in the Inventory account. That is, a company records all purchases and sales (issues) of goods directly in the Inventory account as they occur. Under a **periodic inventory system**, companies determine the quantity of inventory on hand only periodically. A company debits a Purchases account, but the Inventory account remains the same. It determines cost of goods sold at the end of the period by subtracting ending inventory from cost of goods available for sale. A company ascertains ending inventory by physical count.

2 Determine the goods and costs included in inventory.

Companies record purchases of inventory when they obtain control of the goods (generally when they receive legal title to the goods). Shipping terms must be evaluated to determine when legal title passes, and careful consideration must be made for cost of goods sold on consignment and sales with high rates of return and repurchase agreements.

Product costs are those costs that attach to the inventory and are recorded in the Inventory account. Such charges include freight charges on goods purchased, other direct costs of acquisition, and labor and other production costs incurred in processing the goods up to the time of sale. **Period costs** are those costs that are indirectly related to the acquisition or production of goods. These changes, such as selling expense and general and administrative expenses, are therefore not included as part of inventory cost.

3 Describe and compare the cost flow assumptions used to account for inventories.

(1) *Average-cost* prices items in the inventory on the basis of the average cost of all similar goods available during the period. (2) *First-in, first-out (FIFO)* assumes that a company uses goods in the order in which it purchases them. The inventory remaining must therefore represent the most recent purchases. (3) *Last-in, first-out (LIFO)* matches the cost of the last goods purchased against revenue.

4 Identify special issues related to LIFO.

The difference between the inventory method used for internal reporting purposes and LIFO is referred to as **Allowance to Reduce Inventory to LIFO,** or the **LIFO reserve**. The change in LIFO reserve is referred to as the LIFO effect. Companies should disclose either the LIFO reserve or the replacement cost of the inventory in the financial statements.

LIFO liquidations match costs from preceding periods against sales revenues reported in current dollars. This distorts net income and results in increased taxable income in the current period. LIFO liquidations can occur frequently when using a specific-goods LIFO approach.

For the **dollar-value LIFO method,** companies determine and measure increases and decreases in a pool in terms of total dollar value, not the physical quantity of the goods in the inventory pool.

The major advantages of LIFO are the following. (1) It matches recent costs against current revenues to provide a better measure of current earnings. (2) As long as the price level increases and inventory quantities do not decrease, a deferral of income tax occurs in LIFO. (3) Because of the deferral of income tax, cash flow improves. **Major disadvantages** are (1) reduced earnings, (2) understated inventory, (3) does not approximate physical flow of the items except in peculiar situations, and (4) involuntary liquidation issues.

Companies ordinarily prefer LIFO in the following circumstances: (1) if selling prices and revenues have been increasing faster than costs and (2) if a company has a fairly constant "base stock." Conversely, LIFO would probably not be appropriate in the following circumstances: (1) if sale prices tend to lag behind costs, (2) if specific identification is traditional, and (3) when unit costs tend to decrease as production increases, thereby nullifying the tax benefit that LIFO might provide.

5 Determine the effects of inventory errors on the financial statements.

If the company misstates ending inventory: (1) In the balance sheet, the inventory and retained earnings will be misstated, which will lead to miscalculation of the working capital and current ratio, and (2) in the income statement, the cost of goods sold and net income will be misstated. **If the company misstates purchases (and related accounts payable) and inventory:** (1) In the balance sheet, the inventory and accounts payable will be misstated, which will lead to miscalculation of the current ratio, and (2) in the income statement, purchases and ending inventory will be misstated.

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Questions

1. In what ways are the inventory accounts of a retailing company different from those of a manufacturing company?

2. Why should inventories be included in (a) a statement of financial position and (b) the computation of net income?

3. What is the difference between a perpetual inventory and a physical inventory? If a company maintains a perpetual inventory, should its physical inventory at any date be equal to the amount indicated by the perpetual inventory records? Why?

4. Mishima, Inc. indicated in a recent annual report that approximately $19 million of merchandise was received on consignment. Should Mishima, Inc. report this amount on its balance sheet? Explain.

5. What are sales with high rates of return? How should sales with returns be reported in the financial statements?

6. Where, if at all, should the following items be classified on a balance sheet?

a. Goods out on approval to customers.

b. Goods in transit that were recently purchased f.o.b. destination.

c. Land held by a realty firm for sale.

d. Raw materials.

e. Goods received on consignment.

f. Manufacturing supplies.

7. Define "cost" as applied to the valuation of inventories.

8. Distinguish between product costs and period costs as they relate to inventory.

9. **Ford Motor Co.** is considering alternate methods of accounting for the cash discounts it takes when paying suppliers promptly. One method suggested was to report these discounts as financial income when payments are made. Comment on the propriety of this approach.

10. Zonker Inc. purchases 500 units of an item at an invoice cost of $30,000. What is the cost per unit? If the goods are shipped f.o.b. shipping point and the freight bill was $1,500, what is the cost per unit if Zonker Inc. pays the freight charges? If these items were bought on 2/10, n/30 terms and the invoice and the freight bill were paid within the 10-day period, what would be the cost per unit?

11. Specific identification is sometimes said to be the ideal method of assigning cost to inventory and to cost of goods sold. Briefly indicate the arguments for and against this method of inventory valuation.

12. FIFO, average-cost, and LIFO methods are often used instead of specific identification for inventory valuation purposes. Compare these methods with the specific identification method, discussing the theoretical propriety of each method in the determination of income and asset valuation.

13. How might a company obtain a price index in order to apply dollar-value LIFO?

14. Describe the LIFO double-extension method. Using the following information, compute the index at December 31, 2025, applying the double-extension method to a LIFO pool consisting of 25,500 units of product A and 10,350 units of product B. The base-year cost of product A is $10.20 and of product B is $37.00. The price at December 31, 2025, for product A is $21.00 and for product B is $45.60. (Round to two decimal places.)

15. As compared with the FIFO method of costing inventories, does the LIFO method result in a larger or smaller net income in a period of rising prices? What is the comparative effect on net income in a period of falling prices?

16. What is the dollar-value method of LIFO inventory valuation? What advantage does the dollar-value method have over the specific goods approach of LIFO inventory valuation? Why will the traditional LIFO inventory costing method and the dollar-value LIFO inventory costing method produce different inventory valuations if the composition of the inventory base changes?

17. Explain the following terms.

a. LIFO layer.

b. LIFO reserve.

c. LIFO effect.

18. On December 31, 2024, the inventory of Powhattan Company amounts to $800,000. During 2025, the company decides to use the dollar-value LIFO method of costing inventories. On December 31, 2025, the inventory is $1,053,000 at December 31, 2025, prices. Using the December 31, 2024, price level of 100 and the December 31, 2025, price level of 108, compute the inventory value at December 31, 2025, under the dollar-value LIFO method.

19. In an article that appeared in the *Wall Street Journal*, the phrases "phantom (paper) profits" and "high LIFO profits" through involuntary liquidation were used. Explain these phrases.

20. At the balance sheet date, Clarkson Company held title to goods in transit amounting to $214,000. This amount was omitted from the purchases figure for the year and also from the ending inventory. What is the effect of this omission on the net income for the year as calculated when the books are closed? What is the effect on the company's financial position as shown in its balance sheet? Is materiality a factor in determining whether an adjustment for this item should be made?

Brief Exercises

BE7.1 (LO 1) Included in the December 31 trial balance of Rivera Company are the following assets.

Cash	$ 190,000	Work in process	$200,000
Equipment (net)	1,100,000	Accounts receivable (net)	400,000
Prepaid insurance	41,000	Patents	110,000
Raw materials	335,000	Finished goods	170,000

Prepare the current assets section of the December 31 balance sheet.

BE7.2 (LO 1) Matlock Company uses a perpetual inventory system. Its beginning inventory consists of 50 units that cost $34 each. During June, the company purchased 150 units at $34 each, returned 6 units for credit, and sold 125 units at $50 each. Journalize the June transactions.

BE7.3 (LO 2) Stallman Company took a physical inventory on December 31 and determined that goods costing $200,000 were on hand. Not included in the physical count were $25,000 of goods purchased from Pelzer Corporation, f.o.b. shipping point, and $22,000 of goods sold to Alvarez Company for $30,000, f.o.b. destination. Both the Pelzer purchase and the Alvarez sale were in transit at year-end. What amount should Stallman report as its December 31 inventory?

BE7.4 (LO 3) Amsterdam Company uses a periodic inventory system. For April, when the company sold 600 units, the following information is available.

	Units	Unit Cost	Total Cost
April 1 inventory	250	$10	$ 2,500
April 15 purchase	400	12	4,800
April 23 purchase	350	13	4,550
	1,000		$11,850

Compute the April 30 inventory and the April cost of goods sold using the average-cost method.

BE7.5 (LO 3) Data for Amsterdam Company are presented in BE7.4. Compute the April 30 inventory and the April cost of goods sold using the FIFO method.

BE7.6 (LO 3) Data for Amsterdam Company are presented in BE7.4. Compute the April 30 inventory and the April cost of goods sold using the LIFO method.

BE7.7 (LO 4) Trout Company uses the LIFO method for financial reporting purposes but FIFO for internal reporting purposes. At January 1, 2025, the LIFO reserve has a credit balance of $1,300,000. At December 31, 2025, Trout's internal reports indicated that the FIFO inventory balance was $2,900,000 and for external reporting purposes the LIFO inventory balance was $1,500,000. What is the amount of the LIFO reserve and the LIFO effect related to 2025? What is the journal entry needed to record the LIFO effect at December 31, 2025?

BE7.8 (LO 4) Midori Company had ending inventory at end-of-year prices of $100,000 at December 31, 2024; $119,900 at December 31, 2025; and $134,560 at December 31, 2026. The year-end price indexes were 100 at 12/31/24, 110 at 12/31/25, and 116 at 12/31/26. Compute the ending inventory for Midori Company for 2024 through 2026 using the dollar-value LIFO method.

BE7.9 (LO 4) Arna, Inc. uses the dollar-value LIFO method of computing its inventory. Data for the past 3 years follow.

Year Ended December 31	Inventory at Current-Year Cost	Price Index
2024	$19,750	100
2025	22,140	108
2026	25,935	114

Compute the value of the 2025 and 2026 inventories using the dollar-value LIFO method.

BE7.10 (LO 5) Bienvenu Enterprises reported cost of goods sold for 2025 of $1,400,000 and retained earnings of $5,200,000 at December 31, 2025. Bienvenu later discovered that its ending inventories at December 31, 2024 and 2025, were overstated by $110,000 and $35,000, respectively. Determine the corrected amounts for 2025 cost of goods sold and December 31, 2025, retained earnings.

Exercises

E7.1 (LO 2) (Inventoriable Goods and Costs) Presented below is a list of items that may or may not be reported as inventory in a company's December 31 balance sheet.

1. Goods out on consignment at another company's store.
2. Goods sold on an installment basis (bad debts can be reasonably estimated).
3. Goods purchased f.o.b. shipping point that are in transit at December 31.
4. Goods purchased f.o.b. destination that are in transit at December 31.
5. Goods sold to another company, for which our company has signed an agreement to repurchase at a set price that covers all costs related to the inventory.
6. Goods sold where large returns are predictable.
7. Goods sold f.o.b. shipping point that are in transit at December 31.
8. Freight charges on goods purchased.
9. Interest costs incurred for inventories that are routinely manufactured.
10. Costs incurred to advertise goods held for resale.
11. Materials on hand not yet placed into production by a manufacturing firm.
12. Office supplies.
13. Raw materials on which a manufacturing firm has started production but which are not completely processed.
14. Factory supplies.

15. Goods held on consignment from another company.
16. Costs identified with units completed by a manufacturing firm but not yet sold.
17. Goods sold f.o.b. destination that are in transit at December 31.
18. Short-term investments in stocks and bonds that will be resold in the near future.

Instructions

Indicate which of these items would typically be reported as inventory in the financial statements. If an item should not be reported as inventory, indicate how it should be reported in the financial statements.

E7.2 (LO 2) Excel (Inventoriable Goods and Costs) In your audit of Jose Oliva Company, you find that a physical inventory on December 31, 2025, showed merchandise with a cost of $441,000 was on hand at that date. You also discover the following items were all excluded from the $441,000.

1. Merchandise of $61,000 which is held by Oliva on consignment. The consignor is the Max Suzuki Company.
2. Merchandise costing $38,000 which was shipped by Oliva f.o.b. destination to a customer on December 31, 2025. The customer was expected to receive the merchandise on January 6, 2026.
3. Merchandise costing $46,000 which was shipped by Oliva f.o.b. shipping point to a customer on December 29, 2025. The customer was scheduled to receive the merchandise on January 2, 2026.
4. Merchandise costing $83,000 shipped by a vendor f.o.b. destination on December 30, 2025, and received by Oliva on January 4, 2026.
5. Merchandise costing $51,000 shipped by a vendor f.o.b. shipping point on December 31, 2025, and received by Oliva on January 5, 2026.

Instructions

Based on the above information, calculate the amount that should appear on Oliva's balance sheet at December 31, 2025, for inventory.

E7.3 (LO 2) (Inventoriable Goods and Costs) Assume that in an annual audit of Harlowe Inc. at December 31, 2025, you find the following transactions near the closing date.

1. A special machine, fabricated to order for a customer, was finished and specifically segregated in the back part of the shipping room on December 31, 2025. The customer was billed on that date and the machine excluded from inventory although it was shipped on January 4, 2026.
2. Merchandise costing $2,800 was received on January 3, 2026, and the related purchase invoice recorded January 5. The invoice showed the shipment was made on December 29, 2025, f.o.b. destination.
3. A packing case containing a product costing $3,400 was standing in the shipping room when the physical inventory was taken. It was not included in the inventory because it was marked "Hold for shipping instructions." Your investigation revealed that the customer's order was dated December 18, 2025, but that the case was shipped and the customer billed on January 10, 2026. The product was a stock item of your client.
4. Merchandise received on January 6, 2026, costing $680 was entered in the purchase journal on January 7, 2026. The invoice showed shipment was made f.o.b. supplier's warehouse on December 31, 2025. Because it was not on hand at December 31, it was not included in inventory.
5. Merchandise costing $720 was received on December 28, 2025, and the invoice was not recorded. You located it in the hands of the purchasing agent; it was marked "on consignment."

Instructions

Assuming that each of the amounts is material, state whether the merchandise should be included in the client's inventory, and give your reason for your decision on each item.

E7.4 (LO 2) (Inventoriable Goods and Costs—Perpetual) Colin Davis Machine Company maintains a general ledger account for each class of inventory, debiting such accounts for increases during the period and crediting them for decreases. The transactions below relate to the Raw Materials inventory account, which is debited for materials purchased and credited for materials requisitioned for use.

1. An invoice for $8,100, terms f.o.b. destination, was received and entered January 2, 2025. The receiving report shows that the materials were received December 28, 2024.
2. Materials costing $28,000, shipped f.o.b. destination, were not entered by December 31, 2024, "because they were in a railroad car on the company's siding on that date and had not been unloaded."
3. Materials costing $7,300 were returned to the supplier on December 29, 2024, and were shipped f.o.b. shipping point. The return was entered on that date, even though the materials are not expected to reach the supplier's place of business until January 6, 2025.

4. An invoice for $7,500, terms f.o.b. shipping point, was received and entered December 30, 2024. The receiving report shows that the materials were received January 4, 2025, and the bill of lading shows that they were shipped January 2, 2025.
5. Materials costing $19,800 were received December 30, 2024, but no entry was made for them because "they were ordered with a specified delivery of no earlier than January 10, 2025."

Instructions

Prepare correcting general journal entries required at December 31, 2024, assuming that the books have not been closed.

E7.5 (LO 2) (Inventoriable Goods and Costs—Error Adjustments) Craig Company asks you to review its December 31, 2025, inventory values and prepare the necessary adjustments to the books. The following information is given to you.

1. Craig uses the periodic method of recording inventory. A physical count reveals $234,890 of inventory on hand at December 31, 2025.
2. Not included in the physical count of inventory is $13,420 of merchandise purchased on December 15 from Browser. This merchandise was shipped f.o.b. shipping point on December 29 and arrived in January. The invoice arrived and was recorded on December 31.
3. Included in inventory is merchandise sold to Champy on December 30, f.o.b. destination. This merchandise was shipped after it was counted. The invoice was prepared and recorded as a sale on account for $12,800 on December 31. The merchandise cost $7,350, and Champy received it on January 3.
4. Included in inventory was merchandise received from Dudley on December 31 with an invoice price of $15,630. The merchandise was shipped f.o.b. destination. The invoice, which has not yet arrived, has not been recorded.
5. Not included in inventory is $8,540 of merchandise purchased from Glowser Industries. This merchandise was received on December 31 after the inventory had been counted. The invoice was received and recorded on December 30.
6. Included in inventory was $10,438 of inventory held by Craig on consignment from Jackel Industries.
7. Included in inventory is merchandise sold to Kemp f.o.b. shipping point. This merchandise was shipped on December 31 after it was counted. The invoice was prepared and recorded as a sale for $18,900 on December 31. The cost of this merchandise was $10,520, and Kemp received the merchandise on January 5.
8. Excluded from inventory was a carton labeled "Please accept for credit." This carton contains merchandise costing $1,500 which had been sold to a customer for $2,600. No entry had been made to the books to reflect the return, but none of the returned merchandise seemed damaged; Craig will honor the return.

Instructions

a. Determine the proper inventory balance for Craig Company at December 31, 2025.

b. Prepare any correcting entries to adjust inventory to its proper amount at December 31, 2025. Assume the books have not been closed.

E7.6 (LO 2) (Determining Merchandise Amounts—Periodic) Two or more items are omitted in each of the following tabulations of income statement data. Fill in the amounts that are missing.

	2024	2025	2026
Sales revenue	$290,000	$?	$410,000
Sales returns and allowances	11,000	13,000	?
Net sales	?	347,000	?
Beginning inventory	20,000	32,000	?
Ending inventory	?	?	?
Purchases	?	260,000	298,000
Purchase returns and allowances	5,000	8,000	10,000
Freight-in	8,000	9,000	12,000
Cost of goods sold	233,000	?	293,000
Gross profit on sales	46,000	91,000	97,000

E7.7 (LO 2) (Purchases Recorded Net) Presented below are transactions related to Tom Brokaw, Inc.

May 10 Purchased goods billed at $15,000 subject to cash discount terms of 2/10, n/60.
11 Purchased goods billed at $13,200 subject to terms of 1/15, n/30.
19 Paid invoice of May 10.
24 Purchased goods billed at $11,500 subject to cash discount terms of 2/10, n/30.

Instructions

a. Prepare general journal entries for the transactions above under the assumption that purchases are to be recorded at net amounts after cash discounts and that discounts lost are to be treated as financial expense.

b. Assuming no purchase or payment transactions other than those given above, prepare the adjusting entry required on May 31 if financial statements are to be prepared as of that date.

E7.8 (LO 2) (Purchases Recorded, Gross Method) Cruise Industries purchased $10,800 of merchandise on February 1, 2025, subject to a trade discount of 10% and with credit terms of 3/15, n/60. It returned $2,500 (gross price before trade or cash discount) on February 4. The invoice was paid on February 13.

Instructions

a. Assuming that Cruise uses the perpetual method for recording merchandise transactions, record the purchase, return, and payment using the gross method.

b. Assuming that Cruise uses the periodic method for recording merchandise transactions, record the purchase, return, and payment using the gross method.

c. At what amount would the purchase on February 1 be recorded if the net method were used?

E7.9 (LO 3) Excel (Periodic versus Perpetual Entries) Fong Sai-Yuk Company sells one product. Presented below is information for January for Fong Sai-Yuk Company.

Jan.	1	Inventory	100 units at $5 each
	4	Sale	80 units at $8 each
	11	Purchase	150 units at $6 each
	13	Sale	120 units at $8.75 each
	20	Purchase	160 units at $7 each
	27	Sale	100 units at $9 each

Fong Sai-Yuk uses the FIFO cost flow assumption. All purchases and sales are on account.

Instructions

a. Assume Fong Sai-Yuk uses a periodic system. Prepare all necessary journal entries, including the end-of-month closing entry to record cost of goods sold. A physical count indicates that the ending inventory for January is 110 units.

b. Compute gross profit using the periodic system.

c. Assume Fong Sai-Yuk uses a perpetual system. Prepare all necessary journal entries.

d. Compute gross profit using the perpetual system.

E7.10 (LO 3) (FIFO and LIFO—Periodic and Perpetual) Inventory information for Part 311 of Monique Aaron Corp. discloses the following information for the month of June.

June	1	Balance	300 units @ $10	June	10	Sold	200 units @ $24
	11	Purchased	800 units @ $12		15	Sold	500 units @ $25
	20	Purchased	500 units @ $13		27	Sold	300 units @ $27

Instructions

a. Assuming that the periodic inventory method is used, compute the cost of goods sold and ending inventory under (1) LIFO and (2) FIFO.

b. Assuming that the perpetual inventory method is used and costs are computed at the time of each withdrawal, what is the value of the ending inventory at LIFO?

c. Assuming that the perpetual inventory method is used and costs are computed at the time of each withdrawal, what is the gross profit if the inventory is valued at FIFO?

d. Why is it stated that LIFO usually produces a lower gross profit than FIFO?

E7.11 (LO 3) (FIFO, LIFO and Average-Cost Determination) John Adams Company's record of transactions for the month of April was as follows.

Purchases		Sales	
April 1 (balance on hand)	600 @ $6.00	April 3	500 @ $10.00
4	1,500 @ 6.08	9	1,400 @ 10.00
8	800 @ 6.40	11	600 @ 11.00
13	1,200 @ 6.50	23	1,200 @ 11.00
21	700 @ 6.60	27	900 @ 12.00
29	500 @ 6.79		4,600
	5,300		

Instructions

a. Assuming that periodic inventory records are kept in units only, compute the inventory at April 30 using (1) LIFO and (2) average-cost.

b. Assuming that perpetual inventory records are kept in dollars, determine the inventory using (1) FIFO and (2) LIFO.

c. Compute cost of goods sold assuming periodic inventory procedures and inventory priced at FIFO.

d. In an inflationary period, which inventory method—FIFO, LIFO, average-cost—will show the highest net income?

E7.12 (LO 3) (FIFO, LIFO, Average-Cost Inventory) Shania Twain Company was formed on December 1, 2024. The following information is available from Twain's inventory records for Product BAP.

	Units	Unit Cost
January 1, 2025 (beginning inventory)	600	$ 8.00
Purchases:		
January 5, 2025	1,200	9.00
January 25, 2025	1,300	10.00
February 16, 2025	800	11.00
March 26, 2025	600	12.00

A physical inventory on March 31, 2025, shows 1,600 units on hand.

Instructions

Prepare schedules to compute the ending inventory at March 31, 2025, under each of the following inventory methods.

a. FIFO **b.** LIFO. **c.** Weighted-average (round unit costs to two decimal places).

E7.13 (LO 3) (Compute FIFO, LIFO, Average-Cost—Periodic) Presented below is information related to Blowfish radios for the Hootie Company for the month of July.

Date	Transaction	Units In	Unit Cost	Total	Units Sold	Selling Price	Total
July 1	Balance	100	$4.10	$ 410			
6	Purchase	800	4.20	3,360			
7	Sale				300	$7.00	$ 2,100
10	Sale				300	7.30	2,190
12	Purchase	400	4.50	1,800			
15	Sale				200	7.40	1,480
18	Purchase	300	4.60	1,380			
22	Sale				400	7.40	2,960
25	Purchase	500	4.58	2,290			
30	Sale				200	7.50	1,500
	Totals	2,100		$9,240	1,400		$10,230

Instructions

a. Assuming that the periodic inventory method is used, compute the inventory cost at July 31 under each of the following cost flow assumptions.

1. FIFO.

2. LIFO.

3. Weighted-average.

b. Answer the following questions.

1. Which of the methods used above will yield the lowest figure for gross profit for the income statement? Explain why.

2. Which of the methods used above will yield the lowest figure for ending inventory for the balance sheet? Explain why.

E7.14 (LO 3) (FIFO and LIFO—Periodic and Perpetual) The following is a record of Pervis Ellison Company's transactions for Boston Teapots for the month of May 2025.

May 1	Balance 400 units @ $20	May 10	Sale 300 units @ $38
12	Purchase 600 units @ $25	20	Sale 540 units @ $38
28	Purchase 400 units @ $30		

Instructions

a. Assuming that perpetual inventories are not maintained and that a physical count at the end of the month shows 560 units on hand, what is the cost of the ending inventory using (1) FIFO and (2) LIFO?

b. Assuming that perpetual records are maintained and they tie into the general ledger, calculate the ending inventory using (1) FIFO and (2) LIFO.

E7.15 (LO 3) (FIFO and LIFO; Income Statement Presentation) The board of directors of Ichiro Corporation is considering whether or not it should instruct the accounting department to shift from a first-in, first-out (FIFO) basis of pricing inventories to a last-in, first-out (LIFO) basis. The following information is available.

Sales	21,000 units @ $50
Inventory, January 1	6,000 units @ 20
Purchases	6,000 units @ 22
	10,000 units @ 25
	7,000 units @ 30
Inventory, December 31	8,000 units @ ?
Operating expenses	$200,000

Instructions

Prepare a condensed income statement for the year on both bases for comparative purposes.

E7.16 (LO 3) (FIFO and LIFO Effects) You are the vice president of finance of Sandy Alomar Corporation, a retail company that prepared two different schedules of gross margin for the first quarter ended March 31, 2025. These schedules appear below.

	Sales ($5 per unit)	Cost of Goods Sold	Gross Margin
Schedule 1	$150,000	$124,900	$25,100
Schedule 2	150,000	129,400	20,600

The computation of cost of goods sold in each schedule is based on the following data.

	Units	Cost per Unit	Total Cost
Beginning inventory, January 1	10,000	$4.00	$40,000
Purchase, January 10	8,000	4.20	33,600
Purchase, January 30	6,000	4.25	25,500
Purchase, February 11	9,000	4.30	38,700
Purchase, March 17	11,000	4.40	48,400

Jane Torville, the president of the corporation, cannot understand how two different gross margins can be computed from the same set of data. As the vice president of finance, you have explained to Ms. Torville that the two schedules are based on different assumptions concerning the flow of inventory costs, i.e., FIFO and LIFO. Schedules 1 and 2 were not necessarily prepared in this sequence of cost flow assumptions.

Instructions

Prepare two separate schedules computing cost of goods sold and supporting schedules showing the composition of the ending inventory under both cost flow assumptions.

E7.17 (LO 3) (FIFO and LIFO—Periodic) Brady Sports began operations on January 2, 2025. The following stock record card for footballs was taken from the records at the end of the year.

Date	Voucher	Terms	Units Received	Unit Invoice Cost	Gross Invoice Amount
1/15	10624	Net 30	50	$20	$1,000
3/15	11437	1/5, net 30	65	16	1,040
6/20	21332	1/10, net 30	90	15	1,350
9/12	27644	1/10, net 30	84	12	1,008
11/24	31269	1/10, net 30	76	11	836
	Totals		365		$5,234

A physical inventory on December 31, 2025, reveals that 100 footballs were in stock. The bookkeeper informs you that all the discounts were taken. Assume that Brady Sports uses the invoice price less discount for recording purchases.

Instructions

a. Compute the December 31, 2025, inventory using the FIFO method.

b. Compute the 2025 cost of goods sold using the LIFO method.

c. What method would you recommend to the owner to minimize income taxes in 2025, using the inventory information for footballs as a guide?

E7.18 (LO 4) (LIFO Effect) The following example was provided to encourage the use of the LIFO method. In a nutshell, LIFO subtracts inflation from inventory costs, deducts it from taxable income, and records it in a LIFO reserve account on the books. The LIFO benefit grows as inflation widens the gap between current-year and past-year (minus inflation) inventory costs. This gap is:

	With LIFO	Without LIFO
Revenues	$3,200,000	$3,200,000
Cost of goods sold	2,800,000	2,800,000
Operating expenses	150,000	150,000
Operating income	250,000	250,000
LIFO adjustment	40,000	0
Taxable income	$ 210,000	$ 250,000
Income taxes (36%)	$ 75,600	$ 90,000
Cash flow	$ 174,400	$ 160,000
Extra cash	$ 14,400	0
Increased cash flow	9%	0%

Instructions

a. Explain what is meant by the LIFO reserve account.

b. How does LIFO subtract inflation from inventory costs?

c. Explain how the cash flow of $174,400 in this example was computed. Explain why this amount may not be correct.

d. Why does a company that uses LIFO have extra cash? Explain whether this situation will always exist.

E7.19 (LO 3, 4) (Alternative Inventory Methods—Comprehensive) Tori Amos Corporation began operations on December 1, 2024. The only inventory transaction in 2024 was the purchase of inventory on December 10, 2024, at a cost of $20 per unit. None of this inventory was sold in 2024. Relevant information is as follows.

Ending inventory units		
December 31, 2024		100
December 31, 2025, by purchase date		
December 2, 2025	100	
July 20, 2025	50	150

During the year, the following purchases and sales were made.

Purchases			Sales	
March 15	300 units at	$24	April 10	200
July 20	300 units at	25	August 20	300
September 4	200 units at	28	November 18	150
December 2	100 units at	30	December 12	200

The company uses the periodic inventory method.

Instructions

a. Determine ending inventory under (1) specific identification, (2) FIFO, (3) LIFO, and (4) average-cost.

b. Determine ending inventory using dollar-value LIFO. Assume that the December 2, 2025, purchase cost is the current cost of inventory. (*Hint:* The beginning inventory is the base layer priced at $20 per unit.)

E7.20 (LO 4) (Dollar-Value LIFO) Oasis Company has used the dollar-value LIFO method for inventory cost determination for many years. The following data were extracted from Oasis' records.

Date	Price Index	Ending Inventory at Base Prices	Ending Inventory at Dollar-Value LIFO
December 31, 2025	105	$92,000	$92,600
December 31, 2026	?	97,000	98,350

Instructions

Calculate the index used for 2026 that yielded the above results.

E7.21 (LO 4) (Dollar-Value LIFO) The dollar-value LIFO method was adopted by Enya Corp. on January 1, 2025. Its inventory on that date was $160,000. On December 31, 2025, the inventory at prices existing on that date amounted to $140,000. The price level at January 1, 2025, was 100, and the price level at December 31, 2025, was 112.

Instructions

a. Compute the amount of the inventory at December 31, 2025, under the dollar-value LIFO method.

b. On December 31, 2026, the inventory at prices existing on that date was $172,500, and the price level was 115. Compute the inventory on that date under the dollar-value LIFO method.

E7.22 (LO 4) (Dollar-Value LIFO) Presented below is information related to Dino Radja Company.

Date	Ending Inventory (End-of-Year Prices)	Price Index
December 31, 2022	$ 80,000	100
December 31, 2023	115,500	105
December 31, 2024	108,000	120
December 31, 2025	122,200	130
December 31, 2026	154,000	140
December 31, 2027	176,900	145

Instructions

Compute the ending inventory for Dino Radja Company for 2022 through 2027 using the dollar-value LIFO method.

E7.23 (LO 4) (Dollar-Value LIFO) The following information relates to the Jimmy Johnson Company.

Date	Ending Inventory (End-of-Year Prices)	Price Index
December 31, 2021	$ 70,000	100
December 31, 2022	90,300	105
December 31, 2023	95,120	116
December 31, 2024	105,600	120
December 31, 2025	100,000	125

Instructions

Use the dollar-value LIFO method to compute the ending inventory for Johnson Company for 2021 through 2025.

E7.24 (LO 5) (Inventory Errors—Periodic) Ann M. Martin Company makes the following errors during the current year. (Evaluate each case independently and assume ending inventory in the following year is correctly stated.)

1. Ending inventory is overstated, but purchases and related accounts payable are recorded correctly.
2. Both ending inventory and purchases and related accounts payable are understated. (Assume this purchase was recorded and paid for in the following year.)
3. Ending inventory is correct, but a purchase on account was not recorded. (Assume this purchase was recorded and paid for in the following year.)

Instructions

Indicate the effect of each of these errors on working capital, current ratio (assume that the current ratio is greater than 1), retained earnings, and net income for the current year and the subsequent year.

E7.25 (LO 5) (Inventory Errors) At December 31, 2024, Stacy McGill Corporation reported current assets of $370,000 and current liabilities of $200,000. The following items may have been recorded incorrectly. McGill uses a perpetual inventory system.

1. Goods purchased costing $22,000 were shipped f.o.b. shipping point by a supplier on December 28. McGill received and recorded the invoice on December 29, 2024, but the goods were not included in McGill's inventory because they were not received until January 4, 2025.

2. Goods purchased costing $15,000 were shipped f.o.b. destination by a supplier on December 26. McGill received and recorded the invoice on December 31, but the goods were not included in McGill's 2024 inventory because they were not received until January 2, 2025.
3. Goods held on consignment from Claudia Kishi Company were included in McGill's December 31, 2024, inventory at $13,000.

Instructions

a. Compute the current ratio based on McGill's balance sheet.

b. Recompute the current ratio after corrections are made.

c. By what amount will income (before taxes) be adjusted up or down as a result of the corrections?

E7.26 (LO 5) (Inventory Errors) The net income per books of Linda Patrick Company was determined without knowledge of the errors indicated.

Year	Net Income per Books	Error in Ending Inventory	
2020	$50,000	Overstated	$ 3,000
2021	52,000	Overstated	9,000
2022	54,000	Understated	11,000
2023	56,000	No error	
2024	58,000	Understated	2,000
2025	60,000	Overstated	8,000

Instructions

Prepare a worksheet to show the adjusted net income figure for each of the 6 years after taking into account the inventory errors.

Problems

P7.1 (LO 2, 3, 4) Groupwork (Various Inventory Issues) The following independent situations relate to inventory accounting.

1. Kim Co. purchased goods with a list price of $175,000, subject to trade discounts of 20% and 10%, with no cash discounts allowable. How much should Kim Co. record as the cost of these goods?
2. Keillor Company's inventory of $1,100,000 at December 31, 2025, was based on a physical count of goods priced at cost and before any year-end adjustments relating to the following items.
   a. Goods shipped from a vendor f.o.b. shipping point on December 24, 2025, at an invoice cost of $69,000 to Keillor Company were received on January 4, 2026.
   b. The physical count included $29,000 of goods billed to Sakic Corp. f.o.b. shipping point on December 31, 2025. The carrier picked up these goods on January 3, 2026.

   What amount should Keillor report as inventory on its balance sheet?
3. Zimmerman Corp. had 1,500 units of part M.O. on hand May 1, 2025, costing $21 each. Purchases of part M.O. during May were as follows.

	Units	Unit Cost
May 9	2,000	$22.00
17	3,500	23.00
26	1,000	24.00

   A physical count on May 31, 2025, shows 2,000 units of part M.O. on hand. Using the FIFO method, what is the cost of part M.O. inventory at May 31, 2025? Using the LIFO method, what is the inventory cost? Using the average-cost method, what is the inventory cost?

4. Ashbrook Company adopted the dollar-value LIFO method on January 1, 2025 (using internal price indexes and multiple pools). The following data are available for inventory pool A for the 2 years following adoption of LIFO.

Inventory	At Base-Year Cost	At Current-Year Cost
1/1/25	$200,000	$200,000
12/31/25	240,000	264,000
12/31/26	256,000	286,720

Computing an internal price index and using the dollar-value LIFO method, at what amount should the inventory be reported at December 31, 2026?

5. Donovan Inc., a retail store chain, had the following information in its general ledger for the year 2026.

Merchandise purchased for resale	$909,400
Interest on notes payable to vendors	8,700
Purchase returns	16,500
Freight-in	22,000
Freight-out (delivery expense)	17,100
Cash discounts on purchases	6,800

What is Donovan's inventoriable cost for 2026?

Instructions

Answer each of the preceding questions about inventories, and explain your answers.

P7.2 (LO 2) Groupwork (Inventory Adjustments) Dimitri Company, a manufacturer of small tools, provided the following information from its accounting records for the year ended December 31, 2025.

Inventory at December 31, 2025 (based on physical count of goods in Dimitri's plant, at cost, on December 31, 2025)	$1,520,000
Accounts payable at December 31, 2025	1,200,000
Net sales (sales less sales returns)	8,150,000

Additional information is as follows.

1. Included in the physical count were tools billed to a customer f.o.b. shipping point on December 31, 2025. These tools had a cost of $31,000 and were billed at $40,000. The shipment was on Dimitri's loading dock waiting to be picked up by the common carrier.
2. Goods were in transit from a vendor to Dimitri on December 31, 2025. The invoice cost was $76,000, and the goods were shipped f.o.b. shipping point on December 29, 2025.
3. Work in process inventory costing $30,000 was sent to an outside processor for plating on December 30, 2025.
4. Tools returned by customers and held pending inspection in the returned goods area on December 31, 2025, were not included in the physical count. On January 8, 2026, the tools costing $32,000 were inspected and returned to inventory. Credit memos totaling $47,000 were issued to the customers on the same date.
5. Tools shipped to a customer f.o.b. destination on December 26, 2025, were in transit at December 31, 2025, and had a cost of $26,000. Upon notification of receipt by the customer on January 2, 2026, Dimitri issued a sales invoice for $42,000.
6. Goods, with an invoice cost of $27,000, received from a vendor at 5:00 p.m. on December 31, 2025, were recorded on a receiving report dated January 2, 2026. The goods were not included in the physical count, but the invoice was included in accounts payable at December 31, 2025.
7. Goods received from a vendor on December 26, 2025, were included in the physical count. However, the related $56,000 vendor invoice was not included in accounts payable at December 31, 2025, because the accounts payable copy of the receiving report was lost.
8. On January 3, 2026, a monthly freight bill in the amount of $8,000 was received. The bill specifically related to merchandise purchased in December 2025, one-half of which was still in the inventory at December 31, 2025. The freight charges were not included in either the inventory or in accounts payable at December 31, 2025.

Instructions

Using the following tabular format, prepare a schedule of adjustments as of December 31, 2025, to the initial amounts per Dimitri's accounting records. Show separately the effect, if any, of each of the eight transactions on the December 31, 2025, amounts. If the transactions would have no effect on the initial amount shown, enter NONE.

	Inventory	Accounts Payable	Net Sales
Initial amounts	$1,520,000	$1,200,000	$8,150,000
Adjustments—increase (decrease)			
1			
2			
3			
4			
5			
6			
7			
8			
Total adjustments			
Adjusted amounts	$	$	$

(AICPA adapted)

P7.3 (LO 2) Excel (Purchases Recorded Gross and Net) Some of the transactions of Torres Company during August are listed below. Torres uses the periodic inventory method.

August 10	Purchased merchandise on account, $12,000, terms 2/10, n/30.
13	Returned part of the purchase of August 10, $1,200, and received credit on account.
15	Purchased merchandise on account, $16,000, terms 1/10, n/60.
25	Purchased merchandise on account, $20,000, terms 2/10, n/30.
28	Paid invoice of August 15 in full.

Instructions

a. Assuming that purchases are recorded at gross amounts and that discounts are to be recorded when taken:

1. Prepare general journal entries to record the transactions.

2. Describe how the various items would be shown in the financial statements.

b. Assuming that purchases are recorded at net amounts and that discounts lost are treated as financial expenses:

1. Prepare general journal entries to enter the transactions.

2. Prepare the adjusting entry necessary on August 31 if financial statements are to be prepared at that time.

3. Describe how the various items would be shown in the financial statements.

c. Which of the two methods do you prefer and why?

P7.4 (LO 3) Excel (Compute FIFO, LIFO, and Average-Cost) Hull Company's record of transactions concerning part X for the month of April was as follows.

Purchases		Sales	
April 1 (balance on hand)	100 @ $5.00	April 5	300
4	400 @ 5.10	12	200
11	300 @ 5.30	27	800
18	200 @ 5.35	28	150
26	600 @ 5.60		
30	200 @ 5.80		

Instructions

a. Compute the inventory at April 30 on each of the following bases. Assume that perpetual inventory records are kept in units only. Carry unit costs to the nearest cent.

1. First-in, first-out (FIFO).

2. Last-in, first-out (LIFO).

3. Average-cost.

b. If the perpetual inventory record is kept in dollars, and costs are computed at the time of each withdrawal, what amount would be shown as ending inventory in (1), (2), and (3) above? (Carry average unit costs to four decimal places.)

P7.5 (LO 3) (Compute FIFO, LIFO, and Average-Cost) Some of the information found on a detail inventory card for Slatkin Inc. for the first month of operations is as follows.

	Received		Issued,	Balance,
Date	No. of Units	Unit Cost	No. of Units	No. of Units
January 2	1,200	$3.00		1,200
7			700	500
10	600	3.20		1,100
13			500	600
18	1,000	3.30	300	1,300
20			1,100	200
23	1,300	3.40		1,500
26			800	700
28	1,600	3.50		2,300
31			1,300	1,000

Instructions

a. From these data compute the ending inventory on each of the following bases. Assume that perpetual inventory records are kept in units only. (Carry unit costs to the nearest cent and ending inventory to the nearest dollar.)

1. First-in, first-out (FIFO).

2. Last-in, first-out (LIFO).

3. Average-cost.

b. If the perpetual inventory record is kept in dollars, and costs are computed at the time of each withdrawal, would the amounts shown as ending inventory in (1), (2), and (3) above be the same? Explain and compute. (Round average unit costs to four decimal places.)

P7.6 (LO 3) Groupwork (Compute FIFO, LIFO, Average-Cost—Periodic and Perpetual) Ehlo Company is a multiproduct firm. Presented below is information concerning one of its products, the Hawkeye.

Date	Transaction	Quantity	Price/Cost
1/1	Beginning inventory	1,000	$12
2/4	Purchase	2,000	18
2/20	Sale	2,500	30
4/2	Purchase	3,000	23
11/4	Sale	2,200	33

Instructions

Compute cost of goods sold, assuming Ehlo uses:

a. Periodic system, FIFO cost flow.

b. Perpetual system, FIFO cost flow.

c. Periodic system, LIFO cost flow.

d. Perpetual system, LIFO cost flow.

e. Periodic system, weighted-average cost flow.

f. Perpetual system, moving-average cost flow.

P7.7 (LO 3) Groupwork (Financial Statement Effects of FIFO and LIFO) The management of Tritt Company has asked its accounting department to describe the effect upon the company's financial position and its income statements of accounting for inventories on the LIFO rather than the FIFO basis during 2025 and 2026. The accounting department is to assume that the change to LIFO would have been effective on January 1, 2025, and that the initial LIFO base would have been the inventory value on December 31, 2024. The following are the company's financial statements and other data for the years 2025 and 2026 when the FIFO method was employed.

	Financial Position as of		
	12/31/24	12/31/25	12/31/26
Cash	$ 90,000	$130,000	$154,000
Accounts receivable	80,000	100,000	120,000
Inventory	120,000	140,000	176,000
Other assets	160,000	170,000	200,000
Total assets	$450,000	$540,000	$650,000

	Financial Position as of		
	12/31/24	12/31/25	12/31/26
Accounts payable	$ 40,000	$ 60,000	$ 80,000
Other liabilities	70,000	80,000	110,000
Common stock	200,000	200,000	200,000
Retained earnings	140,000	200,000	260,000
Total liabilities and equity	$450,000	$540,000	$650,000

	Income for Years Ended	
	12/31/25	12/31/26
Sales revenue	$900,000	$1,350,000
Less: Cost of goods sold	505,000	756,000
Other expenses	205,000	304,000
	710,000	1,060,000
Income before income taxes	190,000	290,000
Income taxes (40%)	76,000	116,000
Net income	$114,000	$ 174,000

Other data:

1. Inventory on hand at December 31, 2024, consisted of 40,000 units valued at $3.00 each.
2. Sales (all units sold at the same price in a given year):

   2025—150,000 units @ $6.00 each 2026—180,000 units @ $7.50 each
3. Purchases (all units purchased at the same price in given year):

   2025—150,000 units @ $3.50 each 2026—180,000 units @ $4.40 each
4. Income taxes at the effective rate of 40% are paid on December 31 each year.

Instructions

Name the account(s) presented in the financial statements that would have different amounts for 2026 if LIFO rather than FIFO had been used, and state the new amount for each account that is named. Show computations.

(CMA adapted)

P7.8 (LO 4) (Dollar-Value LIFO) Norman's Televisions produces television sets in three categories: portable, midsize, and flat-screen. On January 1, 2025, Norman adopted dollar-value LIFO and decided to use a single inventory pool. The company's January 1 inventory consists of:

Category	Quantity	Cost per Unit	Total Cost
Portable	6,000	$100	$ 600,000
Midsize	8,000	250	2,000,000
Flat-screen	3,000	400	1,200,000
	17,000		$3,800,000

During 2025, the company had the following purchases and sales.

Category	Quantity Purchased	Cost per Unit	Quantity Sold	Selling Price per Unit
Portable	15,000	$110	14,000	$150
Midsize	20,000	300	24,000	405
Flat-screen	10,000	500	6,000	600
	45,000		44,000	

Instructions

(Round to four decimals.)

a. Compute ending inventory, cost of goods sold, and gross profit.

b. Assume the company uses three inventory pools instead of one. Repeat instruction (a).

P7.9 (LO 4) Groupwork **(Internal Indexes—Dollar-Value LIFO)** On January 1, 2025, Bonanza Wholesalers Inc. adopted the dollar-value LIFO inventory method for income tax and external financial reporting purposes. However, Bonanza continued to use the FIFO inventory method for internal accounting and management purposes. In applying the LIFO method, Bonanza uses internal conversion price indexes and the multiple pools approach under which substantially identical inventory items are grouped into LIFO inventory pools. The following data were available for inventory pool no. 1, which comprises products A and B, for the 2 years following the adoption of LIFO.

	FIFO Basis per Records		
	Units	Unit Cost	Total Cost
Inventory, 1/1/25			
Product A	10,000	$30	$300,000
Product B	9,000	25	225,000
			$525,000
Inventory, 12/31/25			
Product A	17,000	36	$612,000
Product B	9,000	26	234,000
			$846,000
Inventory, 12/31/26			
Product A	13,000	40	$520,000
Product B	10,000	32	320,000
			$840,000

Instructions

a. Prepare a schedule to compute the internal conversion price indexes for 2025 and 2026. Round indexes to two decimal places.

b. Prepare a schedule to compute the inventory amounts at December 31, 2025 and 2026, using the dollar-value LIFO inventory method.

(AICPA adapted)

P7.10 (LO 4) (Internal Indexes—Dollar-Value LIFO) Presented below is information related to Kaisson Corporation for the last 3 years.

Item	Quantities in Ending Inventories	Base-Year Cost		Current-Year Cost	
		Unit Cost	Amount	Unit Cost	Amount
December 31, 2024					
A	9,000	$ 2.00	$18,000	$2.20	$19,800
B	6,000	3.00	18,000	3.55	21,300
C	4,000	5.00	20,000	5.40	21,600
		Totals	$56,000		$62,700
December 31, 2025					
A	9,000	$ 2.00	$18,000	$2.60	$23,400
B	6,800	3.00	20,400	3.75	25,500
C	6,000	5.00	30,000	6.40	38,400
		Totals	$68,400		$87,300
December 31, 2026					
A	8,000	$ 2.00	$16,000	$2.70	$21,600
B	8,000	3.00	24,000	4.00	32,000
C	6,000	5.00	30,000	6.20	37,200
		Totals	**$70,000**		**$90,800**

Instructions

Compute the ending inventories under the dollar-value LIFO method for 2024, 2025, and 2026. The base period is January 1, 2024, and the beginning inventory cost at that date was $45,000. Compute indexes to two decimal places.

P7.11 (LO 4) Writing (Dollar-Value LIFO) Richardson Company cans a variety of vegetable-type soups. Recently, the company decided to value its inventories using dollar-value LIFO pools. The clerk who accounts for inventories does not understand how to value the inventory pools using this new method, so, as a private consultant, you have been asked to teach him how this new method works.

He has provided you with the following information about purchases made over a 6-year period.

Date	Ending Inventory (End-of-Year Prices)	Price Index
Dec. 31, 2021	$ 80,000	100
Dec. 31, 2022	111,300	105
Dec. 31, 2023	108,000	120
Dec. 31, 2024	128,700	130
Dec. 31, 2025	147,000	140
Dec. 31, 2026	174,000	145

You have already explained to him how this inventory method is maintained, but he would feel better about it if you were to leave him detailed instructions explaining how these calculations are done and why he needs to put all inventories at a base-year value.

Instructions

a. Compute the ending inventory for Richardson Company for 2021 through 2026 using dollar-value LIFO.

b. Using your computation schedules as your illustration, write a step-by-step set of instructions explaining how the calculations are done. Begin your explanation by briefly explaining the theory behind this inventory method, including the purpose of putting all amounts into base-year price levels.

Using Your Judgment

Financial Statement Analysis Case: T J International

UYJ7.1 **T J International** was founded in 1969 as Trus Joist International. The firm, a manufacturer of specialty building products, has its headquarters in Boise, Idaho. The company, through its partnership in the Trus Joist MacMillan joint venture, develops and manufactures engineered lumber. This product is a high-quality substitute for structural lumber and uses lower-grade wood and materials formerly considered waste. The company also is majority owner of the Outlook Window Partnership, which is a consortium of three wood and vinyl window manufacturers.

Following is T J International's adapted income statement and information concerning inventories from its annual report.

T J International

Sales	$618,876,000
Cost of goods sold	475,476,000
Gross profit	143,400,000
Selling and administrative expenses	102,112,000
Income from operations	41,288,000
Other expense	24,712,000
Income before Income tax	16,576,000
Income tax	7,728,000
Net income	$ 8,848,000

Inventories. Inventories are valued at the lower of cost or market and include material, labor, and production overhead costs. Inventories consisted of the following:

	Current Year	Prior Year
Finished goods	$27,512,000	$23,830,000
Raw materials and work-in-progress	34,363,000	33,244,000
	61,875,000	57,074,000
Reduction to LIFO cost	(5,263,000)	(3,993,000)
	$56,612,000	$53,081,000

The last-in, first-out (LIFO) method is used for determining the cost of lumber, veneer, Microllam lumber, TJI joists, and open web joists. Approximately 35 percent of total inventories at the end of the current year were valued using the LIFO method. The first-in, first-out(FIFO) method is used to determine the cost of all other inventories.

Instructions

a. How much would income before taxes have been if FIFO costing had been used to value all inventories?

b. If the income tax rate is 46.6%, what would income tax have been if FIFO costing had been used to value all inventories? In your opinion, is this difference in net income between the two methods material? Explain.

c. Does the use of a different costing system for different types of inventory mean that there is a different physical flow of goods among the different types of inventory? Explain.

Financial Statement Analysis Case: Noven Pharmaceuticals, Inc.

UYJ7.2 Noven Pharmaceuticals, Inc., headquartered in Miami, Florida, describes itself in a recent annual report as follows.

> **Noven Pharmaceuticals, Inc.**
>
> Noven is a place of ideas—a company where scientific excellence and state-of-the-art manufacturing combine to create new answers to human needs. Our transdermal delivery systems spend drugs painlessly and effortlessly into the bloodstream by means of a simple skin patch. This technology has proven applications in estrogen replacement, but at Noven we are developing a variety of systems incorporating bestselling drugs that fight everything from asthma, anxiety and dental pain to cancer, heart disease and neurological illness. Our research portfolio also includes new technologies such as fontophoresis, in which drugs are delivered through the skin by means of electrical currents, as well as products that could satisfy broad consumer needs, such as our anti-microbal mouthrinse.

Noven also reported in its annual report that its activities to date have consisted of product development efforts, some of which have been independent and some of which have been completed in conjunction with **Rhone-Poulenc Rorer (RPR)** and **Ciba-Geigy**. The revenues so far have consisted of money received from licensing fees, "milestone" payments (payments made under licensing agreements when certain stages of the development of a certain product have been completed), and interest on its investments. The company expects that it will have significant revenue in the upcoming fiscal year from the launch of its first product, a transdermal estrogen delivery system.

The current assets portion of Noven's balance sheet follows.

Cash and cash equivalents	$12,070,272
Securities held to maturity	23,445,070
Inventory of supplies	1,264,553
Prepaid and other current assets	825,159
Total current assets	$37,605,054

Inventory of supplies is recorded at the lower-of-cost (first-in, first-out)-or-net realizable value and consists mainly of supplies for research and development.

Instructions

a. What would you expect the physical flow of goods for a pharmaceutical manufacturer to be most like: FIFO, LIFO, or random (flow of goods does not follow a set pattern)? Explain.

b. What are some of the factors that Noven should consider as it selects an inventory measurement method?

c. Suppose that Noven had $49,000 in an inventory of transdermal estrogen delivery patches. These patches are from an initial production run and will be sold during the coming year. Why do you think that this amount is not shown in a separate inventory account? In which of the accounts shown is the inventory likely to be? At what point will the inventory be transferred to a separate inventory account?

Financial Statement Analysis Case: The Kroger Company

UYJ7.3 The Kroger Company reported the following data in its annual report (in millions).

	February 1, 2020	February 2, 2019	February 3, 2018
Net sales	$122,286	$121,852	$122,662
Cost of sales (using LIFO)	95,294	95,103	95,662
Year-end inventories using FIFO	8,464	8,123	7,781
Year-end inventories using LIFO	7,084	6,846	6,533

Instructions

a. Compute Kroger's inventory turnovers for fiscal years ending February 1, 2020, and February 2, 2019, using:

1. Cost of sales and LIFO inventory.

2. Cost of sales and FIFO inventory.

b. Some firms calculate inventory turnover using sales rather than cost of goods sold in the numerator. Calculate Kroger's fiscal years ending February 1, 2020, and February 2, 2019, turnover, using:

1. Sales and LIFO inventory.

2. Sales and FIFO inventory.

c. State which method you would choose to evaluate Kroger's performance. Justify your choice.

Accounting, Analysis, and Principles

UYJ7.4 Englehart Company sells two types of pumps. One is large and is for commercial use. The other is smaller and is used in residential swimming pools. The following inventory data is available for the month of March.

	Units	Price per Unit	Total
Residential Pumps			
Inventory at Feb. 28:	200	$ 400	$ 80,000
Purchases:			
March 10	500	$ 450	$225,000
March 20	400	$ 475	$190,000
March 30	300	$ 500	$150,000
Sales:			
March 15	500	$ 540	$270,000
March 25	400	$ 570	$228,000
Inventory at March 31:	500		
Commercial Pumps			
Inventory at Feb. 28:	600	$ 800	$480,000
Purchases:			
March 3	600	$ 900	$540,000
March 12	300	$ 950	$285,000
March 21	500	$1,000	$500,000
Sales:			
March 18	900	$1,080	$972,000
March 29	600	$1,140	$684,000
Inventory at March 31:	500		

Accounting

a. Assuming Englehart uses a periodic inventory system, determine the cost of inventory on hand at March 31 and the cost of goods sold for March under first-in, first-out (FIFO).

b. Assume Englehart uses dollar-value LIFO and one pool, consisting of the combination of residential and commercial pumps. Determine the cost of inventory on hand at March 31 and the cost of goods sold for March. Assume Englehart's initial adoption of LIFO is on March 1. Use the double-extension method to determine the appropriate price indices. (*Hint:* The price index for February 28/March 1 should be 1.00.) (Round the index to three decimal places.)

Analysis

a. Assume you need to compute a current ratio for Englehart. Which inventory method (FIFO or dollar-value LIFO) do you think would give you a more meaningful current ratio?

b. Some of Englehart's competitors use LIFO inventory costing and some use FIFO. How can an analyst compare the results of companies in an industry, when some use LIFO and others use FIFO?

Principles

Can companies change from one inventory accounting method to another? If a company changes to an inventory accounting method used by most of its competitors, what are the trade-offs in terms of the conceptual framework discussed in Chapter 1 of the text?

Developing Your Professional Skills

Critical-Thinking Cases

CT7.1 (LO 2) (Inventoriable Goods and Costs) You are asked to travel to Milwaukee to observe and verify the inventory of the Milwaukee branch of one of your clients. You arrive on Thursday, December 30, and find that the inventory procedures have just been started. You spot a railway car on the sidetrack at the unloading door and ask the warehouse superintendent, Buck Rogers, how he plans to inventory the contents of the car. He responds, "We are not going to include the contents in the inventory."

Later in the day, you ask the bookkeeper for the invoice on the carload and the related freight bill. The invoice lists the various items, prices, and extensions of the goods in the car. You note that the carload was shipped December 24 from Albuquerque, f.o.b. Albuquerque, and that the total invoice price of the goods in the car was $35,300. The freight bill called for a payment of $1,500. Terms were net 30 days. The bookkeeper affirms the fact that this invoice is to be held for recording in January.

Instructions

a. Does your client have a liability that should be recorded at December 31? Discuss.

b. Prepare a journal entry(ies), if required, to reflect any accounting adjustment required. Assume a perpetual inventory system is used by your client.

c. For what possible reason(s) might your client wish to postpone recording the transaction?

CT7.2 (LO 2) (Inventoriable Goods and Costs) Clay Matthews, an inventory control specialist, is interested in better understanding the accounting for inventories. Although Clay understands the more sophisticated computer inventory control systems, he has little knowledge of how inventory cost is determined. In studying the records of Strider Enterprises, which sells normal brand-name goods from its own store and on consignment through Chavez Inc., he asks you to answer the following questions.

Instructions

a. Should Strider Enterprises include in its inventory normal brand-name goods purchased from its suppliers but not yet received if the terms of purchase are f.o.b. shipping point (manufacturer's plant)? Why?

b. Should Strider Enterprises include freight-in expenditures as an inventory cost? Why?

c. If Strider Enterprises purchases its goods on terms 2/10, net 30, should the purchases be recorded gross or net? Why?

d. What are products on consignment? How should they be reported in the financial statements?

(AICPA adapted)

CT7.3 (LO 2) (Inventoriable Goods and Costs) George Solti, the controller for Garrison Lumber Company, has recently hired you as assistant controller. He wishes to determine your expertise in the area of inventory accounting and therefore asks you to answer the following unrelated questions.

a. A company is involved in the wholesaling and retailing of automobile tires for foreign cars. Most of the inventory is imported, and it is valued on the company's records at the actual inventory cost plus freight-in. At year-end, the warehousing costs are prorated over cost of goods sold and ending inventory. Are warehousing costs considered a product cost or a period cost?

b. A certain portion of a company's "inventory" is composed of obsolete items. Should obsolete items that are not currently consumed in the production of "goods or services to be available for sale" be classified as part of inventory?

c. A company purchases airplanes for sale to others. However, until they are sold, the company charters and services the planes. What is the proper way to report these airplanes in the company's financial statements?

d. A company wants to buy coal deposits but does not want the financing for the purchase to be reported on its financial statements. The company therefore establishes a trust to acquire the coal deposits. The company agrees to buy the coal over a certain period of time at specified prices. The trust is able to finance the coal purchase and pay off the loan as it is paid by the company for the minerals. How should this transaction be reported?

CT7.4 (LO 2) (Accounting Treatment of Purchase Discounts) Shawnee Corp., a household appliances dealer, purchases its inventories from various suppliers. Shawnee has consistently stated its inventories at FIFO cost.

Instructions

Shawnee is considering alternate methods of accounting for the cash discounts it takes when paying its suppliers promptly. From a theoretical standpoint, discuss the acceptability of each of the following methods.

a. Financial income when payments are made.

b. Reduction of cost of goods sold for the period when payments are made.

c. Direct reduction of purchase cost.

(AICPA adapted)

CT7.5 (LO 2) (General Inventory Issues) In January 2025, Susquehanna Inc. requested and secured permission from the commissioner of the Internal Revenue Service to compute inventories under the last-in, first-out (LIFO) method and elected to determine inventory cost under the dollar-value LIFO method. Susquehanna Inc. satisfied the commissioner that cost could be accurately determined by use of an index number computed from a representative sample selected from the company's single inventory pool.

Instructions

a. Why should inventories be included in (1) a balance sheet and (2) the computation of net income?

b. The Internal Revenue Code allows some accountable events to be considered differently for income tax reporting purposes and financial accounting purposes, while other accountable events must be reported the same for both purposes. Discuss why it might be desirable to report some accountable events differently for financial accounting purposes than for income tax reporting purposes.

c. Discuss the ways and conditions under which the FIFO and LIFO inventory costing methods produce different inventory valuations. Do not discuss procedures for computing inventory cost.

(AICPA adapted)

CT7.6 (LO 3) (LIFO Inventory Advantages) Jane Yoakam, president of Estefan Co., recently read an article that claimed that at least 100 of the country's largest 500 companies were either adopting or considering adopting the last-in, first-out (LIFO) method for valuing inventories. The article stated that the firms were switching to LIFO to (1) neutralize the effect of inflation in their financial statements, (2) eliminate inventory profits, and (3) reduce income taxes. Ms. Yoakam wonders if the switch would benefit her company.

Estefan currently uses the first-in, first-out (FIFO) method of inventory valuation in its periodic inventory system. The company has a high inventory turnover rate, and inventories represent a significant proportion of the assets.

Ms. Yoakam has been told that the LIFO system is more costly to operate and will provide little benefit to companies with high turnover. She intends to use the inventory method that is best for the company in the long run rather than selecting a method just because it is the current fad.

Instructions

a. Explain to Ms. Yoakam what "inventory profits" are and how the LIFO method of inventory valuation could reduce them.

b. Explain to Ms. Yoakam the conditions that must exist for Estefan Co. to receive tax benefits from a switch to the LIFO method.

CT7.7 (LO 3) Writing (Average-Cost, FIFO, and LIFO) Prepare a memorandum containing responses to the following items.

a. Describe the cost flow assumptions used in average-cost, FIFO, and LIFO methods of inventory valuation.

b. Distinguish between weighted-average-cost and moving-average-cost for inventory costing purposes.

c. Identify the effects on both the balance sheet and the income statement of using the LIFO method instead of the FIFO method for inventory costing purposes over a substantial time period when purchase prices of inventoriable items are rising. State why these effects take place.

CT7.8 (LO 4) Writing (LIFO Application and Advantages) Geddes Corporation is a medium-sized manufacturing company with two divisions and three subsidiaries, all located in the United States. The Metallic Division manufactures metal castings for the automotive industry, and the Plastic Division produces small plastic items for electrical products and other uses. The three subsidiaries manufacture various products for other industrial users.

Geddes Corporation plans to change from the lower of first-in, first-out (FIFO)-cost-or market method of inventory valuation to the last-in, first-out (LIFO) method of inventory valuation to obtain tax benefits. To make the method acceptable for tax purposes, the change also will be made for its annual financial statements.

Instructions

a. Describe the establishment of and subsequent pricing procedures for each of the following LIFO inventory methods.

1. LIFO applied to units of product when the periodic inventory system is used.

2. Application of the dollar-value method to LIFO units of product.

b. Discuss the specific advantages and disadvantages of using the dollar-value LIFO application as compared to specific goods LIFO (unit LIFO). (Ignore income tax considerations.)

c. Discuss the general advantages and disadvantages claimed for LIFO methods.

CT7.9 (LO 4) Writing (Dollar-Value LIFO Issues) Arruza Co. is considering switching from the specific-goods LIFO approach to the dollar-value LIFO approach. Because the financial personnel at Arruza know very little about dollar-value LIFO, they ask you to answer the following questions.

a. What is a LIFO pool?

b. Is it possible to use a LIFO pool concept and not use dollar-value LIFO? Explain.

c. What is a LIFO liquidation?

d. How are price indexes used in the dollar-value LIFO method?

e. What are the advantages of dollar-value LIFO over specific-goods LIFO?

CT7.10 (LO 3, 4) Writing (FIFO and LIFO) Harrisburg Company is considering changing its inventory valuation method from FIFO to LIFO because of the potential tax savings. However, management wishes to consider all of the effects on the company, including its reported performance, before making the final decision.

The inventory account, currently valued on the FIFO basis, consists of 1,000,000 units at $8 per unit on January 1, 2025. There are 1,000,000 shares of common stock outstanding as of January 1, 2025, and the cash balance is $400,000.

The company has made the following forecasts for the period 2025–2027.

	2025	2026	2027
Unit sales (in millions of units)	1.1	1.0	1.3
Sales price per unit	$10	$12	$12
Unit purchases (in millions of units)	1.0	1.1	1.2
Purchase price per unit	$8	$9	$10
Annual depreciation (in thousands of dollars)	$300	$300	$300
Cash dividends per share	$0.15	$0.15	$0.15
Cash payments for additions to and replacement of plant and equipment (in thousands of dollars)	$350	$350	$350
Income tax rate	20%	20%	20%
Operating expenses (exclusive of depreciation) as a percentage of sales	15%	15%	15%
Common shares outstanding (in millions)	1	1	1

Instructions

a. Prepare a schedule that illustrates and compares the following data for Harrisburg Company under the FIFO and the LIFO inventory method for 2025–2027. Assume the company would begin LIFO at the beginning of 2025.

1. Year-end inventory balances.
2. Annual net income after taxes.
3. Earnings per share.
4. Cash balance.

Assume all sales are collected in the year of sale and all purchases, operating expenses, and taxes are paid during the year incurred.

b. Using the data above, your answer to (a), and any additional issues you believe need to be considered, prepare a report that recommends whether or not Harrisburg Company should change to the LIFO inventory method. Support your conclusions with appropriate arguments.

(CMA adapted)

CT7.11 (LO 3, 4) Ethics (LIFO Choices) Wilkens Company uses the LIFO method for inventory costing. In an effort to lower net income, company president Mike Wilkens tells the plant accountant to take the unusual step of recommending to the purchasing department a large purchase of inventory at year-end. The price of the item to be purchased has nearly doubled during the year, and the item represents a major portion of inventory value.

Instructions

Answer the following questions.

a. Identify the major stakeholders. If the plant accountant recommends the purchase, what are the consequences?

b. If Wilkens Company were using the FIFO method of inventory costing, would Mike Wilkens give the same order? Why or why not?

FASB Codification References

[1] FASB ASC 605-45-50-2 and 605-45-S99 – transition guidance: 606-10-65-1. [Predecessor literature: "Accounting for Shipping and Handling Fees and Costs," *EITF No. 00–10* (2000).]

[2] FASB ASC 470-40-05. [Predecessor literature: "Accounting for Product Financing Arrangements," *Statement of Financial Accounting Standards No. 49* (Stamford, Conn.: FASB, 1981).]

[3] FASB ASC 606-10-32-11 to 13 and 606-10-55-66 to 78. [Predecessor literature: "Revenue Recognition When Right of Return Exists," *Statement of Financial Accounting Standards No. 48* (Stamford, Conn.: FASB, 1981).]

[4] FASB ASC 835-20-05. [Predecessor literature: "Capitalization of Interest Cost," *Statement of Financial Accounting Standards No. 34* (Stamford, Conn.: FASB, 1979).]

[5] FASB ASC 330-10-30-7. [Predecessor literature: "Inventory Costs: An Amendment of ARB No. 43, Chapter 4," *Statement of Financial Accounting Standards No. 151* (Norwalk, Conn.: FASB 2004).]

[6] FASB ASC 330-10-30. [Predecessor literature: "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin No. 43* (New York: AICPA, 1953), Ch. 4, Statement 4.]

[7] FASB ASC 330-10-S99-1. [Predecessor literature: "AICPA Task Force on LIFO Inventory Problems, *Issues Paper* (New York: AICPA, November 30, 1984), pp. 2–24.]

[8] FASB ASC 330-10-S99-3. [Predecessor literature: "AICPA Task Force on LIFO Inventory Problems, *Issues Paper* (New York: AICPA, November 30, 1984), pp. 36–37.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE7.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition provided for inventory?

b. What is a customer?

c. Under what conditions is a distributor considered a customer?

d. What is a product financing arrangement?

CE7.2 Due to rising fuel costs, your client, **Overstock.com**, is considering adding a charge for shipping and handling costs on products sold through its website. What is the authoritative guidance for reporting these costs?

CE7.3 What guidance does the Codification provide concerning reporting inventories above cost?

CE7.4 What is the nature of the SEC guidance concerning the reporting of LIFO liquidations?

Codification Research Case

In conducting year-end inventory counts, your audit team is debating the impact of the client's right of return policy both on inventory valuation and revenue recognition. The assistant controller argues that there is no need to worry about the return policies since they have not changed in a while. The audit senior wants a more authoritative answer, given the recently issued standard on revenue recognition. You have been asked to conduct some research of the authoritative literature before she presses the point with the client.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. What is the authoritative guidance for revenue recognition when right of return exists?

b. When is this guidance important for a company? That is, for which of steps in the five-step revenue recognition model does right of return come into play?

c. Does the FASB literature provide an example of the accounting for right of return? If so, summarize the example.

d. What are the general guidelines for constraining estimates of the transaction price (variable consideration)?

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

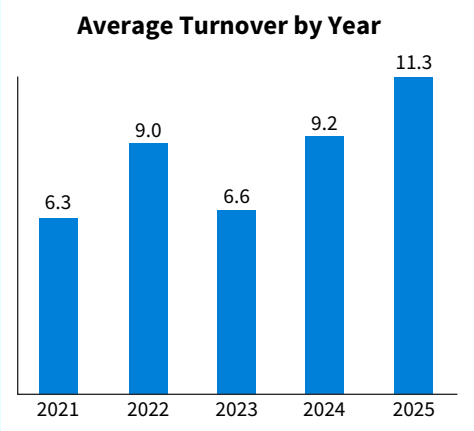
Analytics in Action Activities

Using Data Visualizations to Analyze Inventory

Excel

DA7.1 Accounting systems house vast amounts of raw data that can provide useful insights to management. However, the raw data alone can be overwhelming and difficult to interpret without using tools like Excel.

Excel allows us to organize the data into charts and graphs, calculate financial ratios, and quickly manipulate the data to compare and contrast different metrics. For example, the following chart, based on five years of historical inventory and cost of goods sold information, and generated in just a few minutes, allows management to see trends in the data that may otherwise remain hidden.



Required

For this exercise, you will use pivot tables and pivot charts in Excel. You will first organize a large set of raw data for a company. Then, you will create multiple charts and visualizations to help provide insights into how the company can better manage its inventories.

Go to Wiley Course Resources for complete details and instructions.

CHAPTER 8

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Inventories: Additional Valuation Issues

WHAT are additional inventory valuation issues?

One issue is what to do when inventory has lost value as a result of competitive or economic factors. Another problem arises if cost information is difficult to determine. Consider also the situation in which you have to estimate the inventory because it has been destroyed or you don't have time to count it.

Best Buy
($ in millions)

Partial Balance Sheet		Partial Income Statement	
Current assets		Revenue	$40,339
Cash and cash equivalents	$ 2,432	Cost of goods sold	31,292
Short-term investments	1,456	**Gross profit**	**$ 9,047**
Receivables	1,280		
Merchandise inventory	**5,174**	Net income (loss)	$ 1,233
Other current assets	1,387		
Total current assets	$11,729		

WHY is understanding additional inventory valuation issues important?

The reason is that the investment in inventories is frequently the largest current asset of merchandising (retail) and manufacturing businesses. For example, consider these recent financial statements of **Best Buy**. As you can see, inventory comprises over 44% of current assets, and gross profit is over 22% of sales revenue.

Inventory information is used to compute key ratios, such as inventory turnover and gross profit rate, as well as liquidity measures such as the acid-test ratio, to provide decision-useful information about the company to investors, creditors, and management. In addition to the use of LIFO or FIFO cost flow assumptions for inventory costs that you learned about in Chapter 7, you must also understand how the comparability and therefore the usefulness of the accounting information may also be affected by inventory writes-downs, valuation at net realizable value by some companies, and the use of estimation techniques.

HOW do we account for inventory at other than historical cost?

If inventory declines in value below its original cost, for whatever reason, a company should write down the inventory to reflect this loss. The general rule is to abandon the historical cost principle when the revenue-producing ability of the asset drops below its original cost. Companies value inventory at net realizable value (similar to net selling price) in certain industries where net realizable values are easily available and cost figures are difficult to obtain. Companies estimate the value of inventory by employing the gross profit method or the retail method. As you will learn, these methods rely on historical relationships between the cost and retail values to estimate the value of inventory without taking a physical count.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 8.1 Describe and apply the lower-of-cost-or-net realizable value rule.	**8.1 Lower-of-Cost-or-Net Realizable Value** • Definition • Illustration • Methods of applying • Adjusting to NRV	Examples **8.1** Net Realizable Value **8.2** Final Inventory Value **8.3** Cost-of-Goods-Sold and Loss Methods Put It into Practice LO 8.1 Determine LCNRV
LO 8.2 Describe and apply the lower-of-cost-or-market rule.	**8.2 Lower-of-Cost-or-Market** • How LCM works • Methods of applying LCM • Evaluation of LCNRV and LCM	Examples **8.4** LCM Measures **8.5** Evaluation of Replacement Cost **8.6** Final Inventory Value Put It into Practice LO 8.2 Determine LCM
LO 8.3 Identify other inventory valuation issues.	**8.3 Other Valuation Approaches** • Net realizable value • Relative sales value • Purchase commitments	Examples **8.7** Relative Sales Value **8.8** Gross Profit Using Relative Sales Value **8.9** Purchase Commitment Put It into Practice LO 8.3 Account for Relative Sales Value and Purchase Commitments
LO 8.4 Determine ending inventory by applying the gross profit method.	**8.4 The Gross Profit Method of Estimating Inventory** • Computation of gross profit percentage • Evaluation of gross profit method	Examples **8.10** Gross Profit Method **8.11** Gross Profit Formulas Put It into Practice LO 8.4 Estimate Inventory Using Gross Profit Method
LO 8.5 Determine ending inventory by applying the retail inventory method.	**8.5 Retail Inventory Method** • Concepts • Conventional method • Special items • Evaluation	Examples **8.12** Retail Inventory Method **8.13** Retail-Method Concepts **8.14** Conventional Retail Inventory Method Put It into Practice LO 8.5 Calculate Ending Inventory Using the Retail Method
LO 8.6 Explain how to report and analyze inventory.	**8.6 Presentation and Decision Analysis** • Presentation • Decision analysis	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

8.1 Lower-of-Cost-or-Net Realizable Value

LEARNING OBJECTIVE 1

Describe and apply the lower-of-cost-or-net realizable value rule.

Inventories are recorded at their cost. **Cost** is the acquisition price of inventory computed using one of the historical cost-based methods—specific identification, average-cost, FIFO, or LIFO. However, if inventory declines in value below its original cost, a major departure from the historical cost principle occurs. And whatever the reason for a decline—damage, physical deterioration, obsolescence, changes in price levels, or other causes—a company should write down the inventory to net realizable value (or market) to report this loss. **A company abandons the historical cost principle when the future utility (revenue-producing ability) of the asset drops below its original cost.**

Definition of Net Realizable Value

The term **net realizable value (NRV)** refers to the net amount that a company expects to realize from the sale of inventory. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal (selling), and transportation. [1] (See the FASB Codification References near the end of the chapter.) We show you a simple application of this concept in Example 8.1

Example 8.1
Net Realizable Value

FACTS Assume that **Starbucks Corporation** has unfinished inventory (unroasted coffee beans) with a cost of $950, a sales value of $1,000, estimated cost of completion of $50, and estimated selling costs of $200.

QUESTION What is the net realizable value of Starbuck's inventory?

SOLUTION

Inventory (estimated selling price)		$1,000
Less: Estimated cost of completion	$ 50	
Estimated selling costs	200	250
Net realizable value		$ 750

Starbucks thus reports inventory on its balance sheet at $750. In its income statement, Starbucks reports an inventory loss of $200 ($950 − $750).

Underlying Concepts

Recall from Chapter 1 that NRV is more relevant than cost, but cost is more representationally faithful than NRV.

In Example 8.1, a departure from cost is justified because inventories should not be reported at amounts higher than the amount that is expected to be realized from sale or use.

- Companies should record the loss of utility in income in the period in which the loss occurs, not in the period of sale.
- Companies therefore report their inventories at the **lower-of-cost-or-net realizable value (LCNRV)** at each reporting date (see **Underlying Concepts**). [2]

Illustration of LCNRV

When companies report inventory at LCNRV, keep in mind that estimates are involved in this process, so it is not an "exact science." A company estimates net realizable value based on the most predictable evidence of the inventories' realizable amounts (expected selling price, expected costs of completion, disposal, and transportation), as shown in Example 8.2.

Example 8.2
Final Inventory Value

FACTS Assume that **Whole Foods** provides the following information related to its inventories.

Food	Cost	Net Realizable Value
Spinach	$ 80,000	$120,000
Carrots	100,000	100,000
Cut beans	50,000	40,000
Peas	90,000	72,000
Mixed vegetables	95,000	92,000

QUESTION What is the final inventory value for Whole Foods?

SOLUTION

Food	Cost	Net Realizable Value	Final Inventory Value
Spinach	$ 80,000	$120,000	$ 80,000
Carrots	100,000	100,000	100,000
Cut beans	50,000	40,000	40,000
Peas	90,000	72,000	72,000
Mixed vegetables	95,000	92,000	92,000
			$384,000

Final inventory value:

Spinach	Cost ($80,000) is selected because it is lower than net realizable value.
Carrots	Cost ($100,000) is the same as net realizable value.
Cut beans	Net realizable value ($40,000) is selected because it is lower than cost.
Peas	Net realizable value ($72,000) is selected because it is lower than cost.
Mixed vegetables	Net realizable value ($92,000) is selected because it is lower than cost.

Note that the final inventory value of $384,000 equals the sum of the LCNRV for each of the inventory items; Whole Foods applies the LCNRV rule to each individual type of food.

Methods of Applying LCNRV

In Example 8.2, we assumed that Whole Foods applied the lower-of-cost-or-net realizable value to each individual type of food. However, companies may apply the LCNRV rule either directly to each item, to each major category, or to the total of the inventory. If a company follows a major categories or total inventory approach in applying the LCNRV rule, increases in selling prices on some items can offset decreases in selling prices of other items. To illustrate, assume that Whole Foods separates its food products into two major categories, frozen and canned, as shown in **Illustration 8.1**.

ILLUSTRATION 8.1 Alternative Applications of LCNRV

	Cost	NRV	Lower-of-Cost-or-NRV by: Individual Items	Major Categories	Total Inventory
Frozen					
Spinach	$ 80,000	$120,000	$ 80,000		
Carrots	100,000	100,000	100,000		
Cut beans	50,000	40,000	40,000		
Total frozen	230,000	260,000		$230,000	
Canned					
Peas	90,000	72,000	72,000		
Mixed vegetables	95,000	92,000	92,000		
Total canned	185,000	164,000		164,000	
Total	$415,000	$424,000	$384,000	$394,000	$415,000

As indicated, the reported value of inventory depends on application to individual items, major categories, or the total inventory.

- If Whole Foods applied the LCNRV rule to individual items, the amount of inventory is $384,000.
- If applying the rule to major categories, inventory value increases to $394,000.
- If applying LCNRV to the total inventory, inventory totals $415,000.

Why this difference? When a company uses a major categories or total inventory approach, selling prices higher than cost offset selling prices lower than cost. For Whole Foods, using the major categories approach partially offsets the high selling price for spinach. However, in some situations—using the total inventory approach—lower selling prices on some items are totally offset by higher selling prices for other items.

Companies usually value inventory on an item-by-item basis for two reasons.

1. Tax rules require that companies use an individual-item basis if it is practicable to do so.
2. The individual-item approach gives the most conservative valuation for balance sheet purposes.

Companies that sell only one final product (comprised of many different raw materials) typically value inventory on a total-inventory basis. If a company produces several end products, it might use a major category approach instead.

The method selected should be the one that most clearly reflects income. **Whichever method a company selects, it should apply the method consistently from one period to another.**

Accounting Matters

Where Does Excess Inventory Go?

Accurately forecasting how much inventory to hold is a high-stakes balance between art and science, understanding the consumer, and following the data. Not surprisingly, companies don't always get it right.

Some companies like **Nike** disclose the risks that come with inaccurately forecasting consumer demand relative to their inventory. An excerpt from Nike's annual report to investors states, "Failure to accurately forecast consumer demand could lead to excess inventories or inventory shortages, which could result in decreased operating margins, reduced cash flows and harm to our business."

So, what happens when companies overestimate the amount of inventory to hold? Consider that most industry forecasts didn't predict the Covid-19 pandemic in 2020, which led to a large excess of inventory for many retailers. Whenever companies have significant amounts of excess inventory, they have to weigh their options in how they physically offload their goods. For many brands, there is the option of selling their inventory to off-price retailers at significantly discounted prices, but this isn't always an attractive option as it leads to dilution of the brand name.

Some brands turn to the more charitable choice of donating excess inventory. Clothing donation firm **Good360** received over $600 million in clothes during 2020, more than double the donations received in past years. **Gap** alone donated over $60 million of unworn apparel during 2020.

Selling to discounted retailers and charitable giving are much less controversial than the practice of destroying inventory. High-end retailer **Burberry Group** shocked some investors when it reported that it had destroyed (burned) $37 million of inventory! As companies worldwide enhance their focus on sustainability, inventory levels will play a key role in that analysis.

Source: "What Happens to All of the Unsold Clothes?" *Wall Street Journal* (August 2020).

Adjusting Cost to NRV

One of two methods may be used to record the income effect of valuing inventory at NRV.

- The **cost-of-goods-sold method** debits Cost of Goods Sold for the write-down of the inventory to NRV. As a result, the company does not report a separate loss in the income statement because the cost of goods sold already includes the amount of the loss.
- The **loss method** debits a loss account for the write-down of the inventory to NRV.

We apply both methods in Example 8.3.

As indicated in Example 8.3, you'll see that the cost-of-goods-sold method buries the loss in the Cost of Goods Sold account. The loss method, by identifying the loss due to the

Example 8.3
Cost-of-Goods-Sold and Loss Methods

FACTS Ricardo Company reports the following information related to its inventory.

Sales revenue	$200,000
Cost of goods sold (before NRV adjustment)	108,000
Ending inventory (at cost)	82,000
Ending inventory (at NRV)	70,000

QUESTIONS

a. What are the journal entries to adjust inventory to NRV using (1) the cost-of-goods-sold method and (2) the loss method, assuming the use of the perpetual inventory system?

b. How should the income statement for Ricardo be reported if (1) the cost-of-goods-sold method is used or (2) the loss method is used?

SOLUTION

a. To adjust inventory to NRV:

Cost-of-Goods-Sold Method			Loss Method		
Cost of Goods Sold	12,000		Inventory Loss	12,000	
Inventory ($82,000 − $70,000)		12,000	Inventory ($82,000 − $70,000)		12,000

b. 1. Cost-of-goods-sold method:

Sales revenue	$200,000
Cost of goods sold (after adjustment to NRV*)	120,000
Gross profit on sales	$ 80,000

2. Loss method:

Sales revenue	$200,000
Cost of goods sold	108,000
Gross profit on sales	92,000
Inventory loss	12,000
	$ 80,000

*Cost of goods sold (before adjustment to NRV)	$108,000
Difference between inventory at cost and NRV ($82,000 − $70,000)	12,000
Cost of goods sold (after adjustment to NRV)	$120,000

Underlying Concepts

The income statement under the cost-of-goods-sold method presentation lacks *representational faithfulness*. The loss method illustrates the concepts of full disclosure and materiality. Most importantly, companies must be consistent in which method they use to allow for a consistent presentation of their financial information each year.

write-down, shows the loss separate from Cost of Goods Sold in the income statement. GAAP does not specify a particular account to debit for the write-down. We believe the loss method presentation is preferable because it clearly discloses the loss resulting from a decline in inventory to NRV (see **Underlying Concepts**).

After adjustment to NRV, that inventory value becomes the new cost basis.

- Under GAAP, if inventory values increase in subsequent periods, inventory is not written up.
- This accounting can sometimes lead to distortions in cost of goods sold and gross profit in subsequent periods when inventory that had been written down in a previous period is sold.

For example, **Trek Bicycle Corp.** likely incurs some inventory write-downs each year as newer, better bicycle models replace last year's best seller. Remaining inventory would usually be discounted to be sold and to make space for new inventory. Now consider this scenario against the unprecedented boom in bike sales during the Covid-19 crisis when consumers were desperate for outdoor activities. The increase in bike sales saw global supply chains backed-up, and inventory that may have once been discounted was now selling at a premium!

Accounting Matters

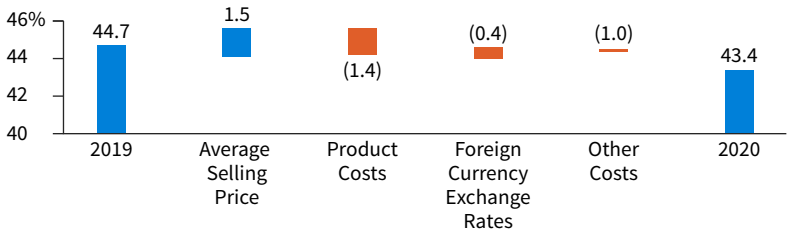
Are These Profit Margins for Real?

The process of writing down inventory is not an exact science and the estimated losses may not come to fruition. The example of **Trek Bicycle** writing down its season-ending inventory, only to go on to sell the inventory at a premium, shows the imperfect nature of these estimates.

How might users of financial statements understand when changes in profit margins are due to real changes in a company's operations or due to an accounting estimate? Well, not all disclosures are created equal, but **Nike** does a nice job of highlighting the details of changes in its profit margin in its annual report to investors as shown in the following chart.

As indicated in the following chart, Nike's margin declined by 1.3% (from 44.7% to 43.4%). While Nike saw a slight increase in selling price in excess of product cost (1.5% – 1.4%), its Other Costs were that main source of margin decline. Nike indicated these increased costs were due to the impacts of Covid-19, including increased factory cancellations costs, higher inventory obsolescence, and the adverse rate impact of supply chain costs on a lower volume of wholesale shipments.

Changes in Gross Margin from Fiscal 2019 to 2020



Put It into Practice LO 8.1

Determine LCNRV

FACTS Gard Corporation has the following four items in its ending inventory.

Item	Cost	Selling Price	Costs to Complete and Sell
M	$2,000	$3,000	$ 900
N	5,000	8,000	3,050
O	4,400	6,000	1,375
P	3,200	5,000	1,170

INSTRUCTIONS

Determine the following.

a. The LCNRV for each item.

b. The amount of write-down, if any, using (1) an item-by-item LCNRV evaluation and (2) total inventory LCNRV evaluation.

SOLUTION

a. The LCNRV for each item is presented as follows.

Item	Cost	NRV	LCNRV
M	$ 2,000	$ 2,100 ($3,000 – $900)	$ 2,000
N	5,000	4,950 ($8,000 – $3,050)	4,950
O	4,400	4,625 ($6,000 – $1,375)	4,400
P	3,200	3,830 ($5,000 – $1,170)	3,200
Total	$14,600	$15,505	$14,550

b. 1. On an item-by-item basis, the write-down is $50, which is due to the decline in NRV for item N ($5,000 – $4,950).

2. There is no write-down when performing the assessment on the total inventory ($15,505 > $14,600).

8.2 Lower-of-Cost-or-Market

LEARNING OBJECTIVE 2

Describe and apply the lower-of-cost-or-market rule.

The use of the LCNRV method works well to measure the decline in value of inventory for most companies. It was designed to simplify and reduce the cost and complexity of inventory measurement under GAAP. However, the FASB determined that for companies using LIFO or the retail inventory methods, LCNRV results in potentially significant costs and does not simplify the subsequent measurement of inventory.[1]

As a solution, companies that use the LIFO or retail inventory method (to be discussed later in the chapter) may use an alternative approach that compares a designated market value of the inventory to cost. This approach is commonly referred to as **lower-of-cost-or-market (LCM)**. Under LCM, you start with replacement cost (the amount the company would pay to replace the inventory) and then apply two additional limitations to value ending inventory: **(1) net realizable value and (2) net realizable value less a normal profit margin.**

[1] Specifically, as was discussed in Chapter 7, LIFO costing generally results in inventory stated at lower historical cost amounts in times of rising prices. However, applying LCNRV to already lower-stated LIFO inventory amounts (in a period when prices decline) results in an **increase** in income. This leads to distortions in income, significant costs to track changes in the LIFO reserve, and is inconsistent with the goal of LCNRV. The Board did not want LIFO inventory method companies to incur these costs, given the change to LCNRV might not simplify the accounting nor improve the information reported to users for these companies. See *FASB Accounting Standards Update 2015-11, Inventory (Topic 330)*: "Simplifying the Measurement of Inventory" (July 2015), paras. BC5–BC9.

- As discussed earlier, net realizable value (NRV) is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion and disposal (selling).
- A normal profit margin is subtracted from NRV to arrive at **net realizable value less a normal profit margin**.

Let's see how this works in practice in Example 8.4.

Example 8.4
LCM Measures

FACTS Parker Corp. has unfinished inventory with an estimated selling price of $1,000, estimated cost of completion and disposal of $300, and a normal profit margin of 10% of sales.

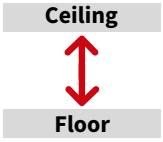
QUESTION What is the net realizable value and net realizable value less a normal profit margin for Parker's inventory?

SOLUTION

Inventory—(based on estimated selling price)	$1,000
Less: Estimated cost of completion and disposal	300
Net realizable value	700
Less: Allowance for normal profit margin (10% of sales)	100
Net realizable value less a normal profit margin	$ 600

The general LCM rule is: **A company values inventory at the lower-of-cost-or-market, with market limited to an amount that is not more than net realizable value or less than net realizable value less a normal profit margin.** [3]

- The **upper limit (ceiling)** is the net realizable value of inventory.
- The **lower limit (floor)** is the net realizable value less a normal profit margin.



Establishing these limits for the value of the inventory prevents companies from over- or understating inventory.

The maximum limitation, **not to exceed the net realizable value (ceiling)**, prevents overstatement of the value of obsolete or damaged inventories. That is, if the replacement cost of an item exceeds its net realizable value, a company should not report inventory at replacement cost. This is because the company can receive only the selling price less cost of disposal (see **Global View**). As Example 8.5 demonstrates, to report the inventory at replacement cost would result in an overstatement of inventory and understatement of the loss in the current period.

Global View
IFRS requires all companies to apply LCNRV. Thus, IFRS does not use a ceiling or floor to determine market. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between GAAP and IFRS.*

Example 8.5
Evaluation of Replacement Cost

FACTS Assume that **Costco** paid $1,000 for an infrared sauna that it can now purchase for $900. The net realizable value of the sauna is $700.

QUESTION What amount—replacement cost or net realizable value—should Costco use in its LCM evaluation?

SOLUTION

Costco should use the $700 net realizable value as the ceiling. This is the amount it could receive upon disposal. To report the replacement cost of $900 overstates the ending inventory and understates the loss for the period.

The minimum limitation (floor) is **not to be less than net realizable value reduced by an estimated normal profit margin.** The floor establishes a value below which a company should not price inventory, regardless of replacement cost. It makes no sense to price inventory below net realizable value less a normal margin. This minimum amount (floor) measures what the company can receive for the inventory and still earn a normal profit. Use of a floor deters understatement of inventory and overstatement of the loss in the current period.

Companies using LCM must incorporate a "normal" profit margin into their analysis, which begs the question, what is normal?

- Profit margins will vary quite substantially across different industries, product categories, and markets.
- **This is another area where companies will rely heavily on data analytics to track historical trends in profit margins at the product level to establish their estimate of a normal profit margin.**

Illustration 8.2 presents the guidelines for valuing inventory at the lower-of-cost-or-market.

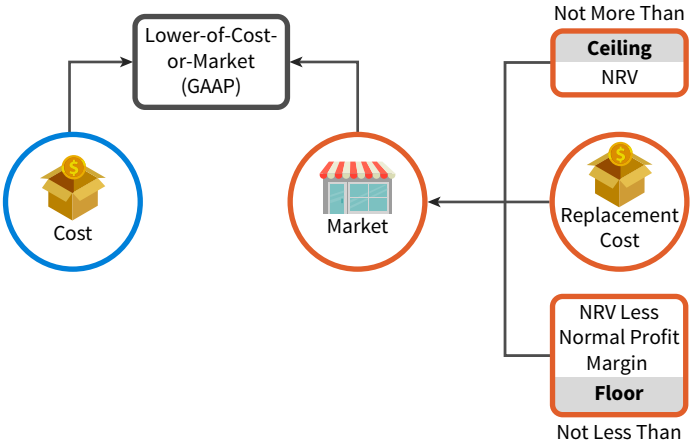


ILLUSTRATION 8.2 Inventory Valuation—Lower-of-Cost-or-Market

How Lower-of-Cost-or-Market Works

The **designated market value** is the amount that a company compares to cost. It is **always the middle value of three amounts:** replacement cost, net realizable value, and net realizable value less a normal profit margin. To illustrate how to compute designated market value, let us return to the inventory data for **Whole Foods**, as shown in Illustration 8.3. (Designated market values are shown in red.) Assume now that Whole Foods uses the LIFO method.

ILLUSTRATION 8.3 Computation of Designated Market Value

Food	Replacement Cost	Net Realizable Value (Ceiling)	Net Realizable Value Less a Normal Profit Margin (Floor)	Designated Market Value
Spinach	$ 88,000	$120,000	$104,000	$104,000
Carrots	90,000	100,000	70,000	90,000
Cut beans	45,000	40,000	27,500	40,000
Peas	36,000	72,000	48,000	48,000
Mixed vegetables	105,000	92,000	80,000	92,000

For each food category, the designated market value (in red) is the middle value among replacement cost, net realizable value and net realizable value less a normal profit margin.

Example 8.6
Final Inventory Value

FACTS Refer to the Whole Foods information from Illustration 8.3.

QUESTION How would you compute the final inventory value for Whole Foods?

SOLUTION

Using the designated market values in Illustration 8.3, the final inventory value for each food category is the lower value between cost and designated market value.

Food	Cost	Designated Market Value	Final Inventory Value
Spinach	$ 80,000	$104,000	$ 80,000
Carrots	100,000	90,000	90,000
Cut beans	50,000	40,000	40,000
Peas	90,000	48,000	48,000
Mixed vegetables	95,000	92,000	92,000
	$415,000		$350,000

As with the LCNRV approach, the application of the lower-of-cost-or-market rule incorporates only losses in value that occur in the normal course of business. Whole Foods makes the following entry (using the loss method) to adjust cost to LCM.

Inventory Loss	65,000	
Inventory ($415,000 − $350,000)		65,000

Methods of Applying Lower-of-Cost-or-Market

In the Whole Foods illustration, we assumed that the company applied the LCM rule to each individual type of food. As in the application of LCNRV presented earlier, companies may apply the LCM rule either directly to each item, to each category, or to the total of the inventory. To illustrate, assume that Whole Foods separates its food products into two major categories, frozen and canned, as shown in Illustration 8.4.

ILLUSTRATION 8.4
Alternative Applications of Lower-of-Cost-or-Market

			Lower-of-Cost-or-Market by:		
	Cost	Designated Market	Individual Items	Major Categories	Total Inventory
Frozen					
Spinach	$ 80,000	$104,000	$ 80,000		
Carrots	100,000	90,000	90,000		
Cut beans	50,000	40,000	40,000		
Total frozen	230,000	234,000		$230,000	
Canned					
Peas	90,000	48,000	48,000		
Mixed vegetables	95,000	92,000	92,000		
Total canned	185,000	140,000		140,000	
Total	$415,000	$374,000	$350,000	$370,000	$374,000

Summarizing the analysis in Illustration 8.4:

- If Whole Foods applied the LCM rule to individual items, the amount of inventory is **$350,000.**
- If applying the rule to major categories, inventory increases to **$370,000.**
- If applying LCM to the total inventory, it increases to **$374,000.**

Why this difference? When a company uses a major categories or total inventory approach, market values higher than cost offset market values lower than cost. For Whole Foods, using the major categories approach partially offsets the high market value for spinach. Using the total inventory approach totally offsets the high market value for spinach.

Recall that companies usually value inventory on an item-by-item basis and this approach gives the most conservative valuation for balance sheet purposes.

- The method selected should be the one that most clearly reflects income.
- Whichever method a company selects, it should apply the method consistently from one period to another.

Evaluation of the LCNRV and LCM Rules

Both the LCNRV and LCM rules suffer some conceptual deficiencies, as shown in Illustration 8.5.

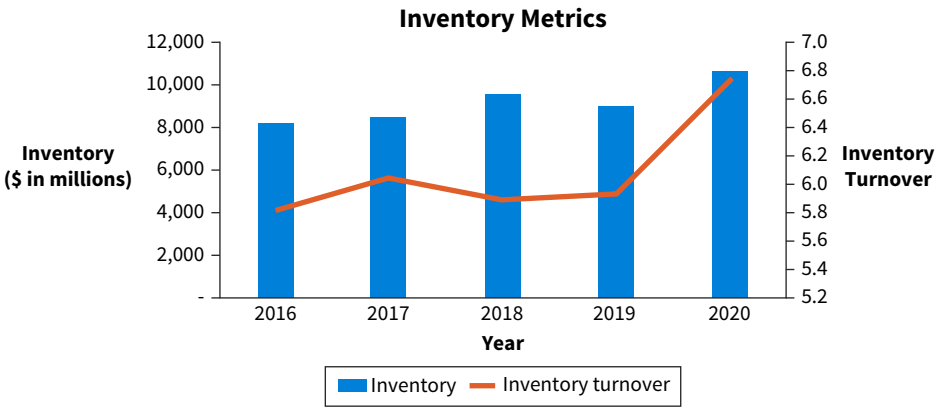
ILLUSTRATION 8.5
Disadvantages of LCNRV and LCM Rules

Major Disadvantages	Result
Mismatch in valuation	A company recognizes decreases in the value of the asset and the charge to expense in the period in which the loss in utility occurs—not in the period of sale. On the other hand, it recognizes increases in the value of the asset only at the point of sale. In other words, a company may value the inventory at cost in one year and at market or NRV in the next year.
Mismatch in income	Net income for the year in which a company takes the loss is lower. Net income of the subsequent period may be higher than normal if the expected reductions in sales price do not materialize.
Use of estimates	Application of these rules uses "normal profit" or "ordinary" costs to sell or dispose in determining inventory values. Since companies develop these estimates based on past experience (which they may not attain in the future), this subjective measure presents an opportunity for income manipulation.

Analytics in Action: Role of Big Data in Inventory

With thousands of inventory products and product categories, imagine the amount of data that companies like **Amazon**, **Target**, or **Apple** must evaluate to report their inventory at the LCNRV or LCM. These companies must consider historical trends on obsolescence coupled with current economic conditions and consumer demand for their products, all to report inventory on the balance sheet.

To limit inventory losses, companies use predictive analytics to make sure they are carrying the right amount of the right type of inventory in the right locations. For example, the following chart represents inventory data from Target. A company like Target will track many different inventory data points, such as total inventory on hand and inventory turnover trends, to ensure that it is effectively managing one of its largest balance sheet items.



Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Put It into Practice LO 8.2

Determine LCM

FACTS Presented below is information related to Fowler Golf, Inc.'s inventory. Assume Fowler uses LIFO and LCM.

Measurement	Golf Bags	Shoes	Rain Suits
Historical cost	$190.00	$106.00	$53.00
Selling price	212.00	145.00	73.75
Cost to complete	19.00	8.00	2.50
Current replacement cost	203.00	105.00	51.00
Normal profit margin	32.00	29.00	21.25

INSTRUCTIONS

Determine the following.

a. The ceiling and the floor that should be used in the lower-of-cost-or-market computation for golf bags.

b. The designated market value that should be used in the lower-of-cost-or-market comparison for shoes.

c. The lower-of-cost-or-market for the rain suits.

SOLUTION

a. The ceiling for golf bags is $193 (net realizable value), computed as follows.

Selling price	$212
Costs to complete	(19)
Ceiling	$193

The floor for golf bags is $161 (NRV less a normal profit margin), computed as follows.

NRV	$193
Normal profit margin	(32)
Floor	$161

b. The designated market value for shoes is $108 (net realizable value), determined as follows.

NRV (Selling price less costs to complete)	$137 ($145 – $8)
Designated market (NRV less normal profit margin)	**$108 ($137 – $29)**
Replacement cost	$105

c. The LCM for rain suits is $51.00 (replacement cost). It is the designated market value, which is less than the historical cost of $53. The designated market value is determined as follows.

NRV (Selling price less costs to complete)	$71.25 ($73.75 – $2.50)
Designated market (Replacement cost)	**$51.00**
NRV less normal profit margin	$50.00 ($71.25 – $21.25)

8.3 Other Valuation Approaches

LEARNING OBJECTIVE 3

Identify other inventory valuation issues.

Valuation at Net Realizable Value

As indicated, companies report inventory at cost or at the LCNRV or LCM.[2] Under limited circumstances, support exists for **recording inventory at net realizable value**, even if that amount is above cost. GAAP permits this exception to the normal recognition rule when **all** the following conditions are met.

1. There is a controlled market with a quoted price applicable to all quantities.
2. No significant costs of disposal are involved.
3. The product is available for immediate delivery.

Unless items of inventory meet the three NRV conditions, they are accounted for based on historical cost.[3]

For example, mining companies ordinarily report inventories of certain minerals (rare metals, especially) at selling prices because there is often a controlled market without significant costs of disposal. Similar treatment is given agricultural products (such as harvested crops or animals held-for-sale) that are immediately marketable at quoted prices.

Another situation in which valuation at net realizable value is allowed is when it is difficult to obtain cost figures. For example, the accounting for inventory in a meat-packing plant presents a costing challenge.

- The "raw material" consists of cattle, each unit of which the company purchases as a whole and then divides into parts that are the products.
- Instead of one product out of many raw materials or parts, the meat-packing company makes many products from one "unit" of raw material.
- To allocate the cost of the animal "on the hoof" into the cost of ribs, chuck, and shoulders is a practical impossibility.

Therefore, because of a peculiarity of the industry, meat-packing companies sometimes carry **inventories at sales price less distribution costs**. It is much easier and more useful for the company to determine the market price of the various products and value them in the inventory at selling price less the various costs necessary to get them to market (costs such as shipping and handling).

This costing situation is in stark contrast to a manufacturing plant, where the company combines various raw materials and purchased parts to create a finished product. The manufacturer can use the cost basis to account for various items in inventory because it knows the cost of each individual component part.

[2] Manufacturing companies frequently employ a **standardized cost system** that predetermines the unit costs for material, labor, and manufacturing overhead and values raw materials, work in process, and finished goods inventories at their standard costs. For financial reporting purposes, it is acceptable to price inventories at standard costs if there is no significant difference between the actual costs and standard costs. **Burlington Industries** and **Hewlett-Packard** use standard costs for valuing at least a portion of their inventories.

[3] Companies that meet the three conditions for valuation at net realizable value (NRV) have an option to use either NRV or LCNRV. **[4]**

Valuation Using Relative Sales Value

A special problem arises when a company buys a group of varying units in a single **lump-sum purchase**, also called a **basket purchase**. To illustrate, assume that Woodland Developers purchases land for $1 million that it will subdivide into 400 lots. These lots are of different sizes and shapes but can be roughly sorted into three groups graded A, B, and C. As Woodland sells the lots, it allocates the purchase cost of $1 million among the lots sold and the lots remaining on hand.

You might wonder, why wouldn't Woodland simply divide the total cost of $1 million by 400 lots, to get a cost of $2,500 for each lot?

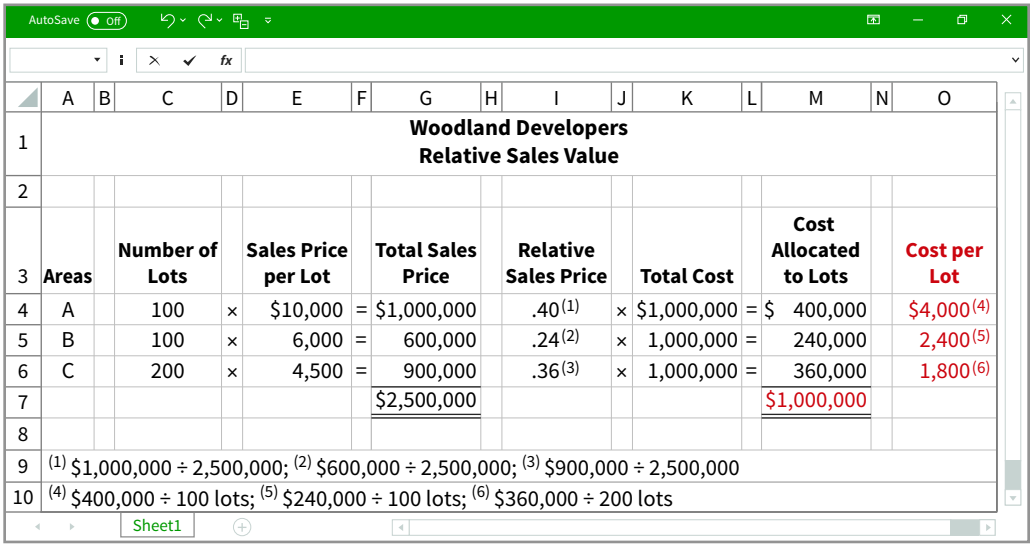
- This approach would not recognize that the lots vary in size, shape, and attractiveness.
- Therefore, to accurately value each unit, the common and most logical practice is to allocate the total among the various units on the basis of their **relative sales value**, as shown in Example 8.7.

Example 8.7
Relative Sales Value

FACTS Woodland Developers purchases land for $1 million that it will subdivide into 400 lots. Area A has 100 lots, which will sell for $1,000,000 (100 × $10,000). Area B has 100 lots with a sales price of $600,000 (100 × $6,000). Area C has 200 lots with a sales price of $900,000 (200 × $4,500). The sales prices across the areas vary based on the view afforded by each lot on the adjacent lake. Area C has no view of the lake, Area B has a partial view, and Area A has an unobstructed view of the lake.

QUESTION How would you compute the cost per lot in Areas A, B, and C, using the relative sales value method?

SOLUTION



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Woodland Developers Relative Sales Value**														
2															
3	**Areas**		**Number of Lots**		**Sales Price per Lot**		**Total Sales Price**		**Relative Sales Price**		**Total Cost**		**Cost Allocated to Lots**		**Cost per Lot**
4	A		100	×	$10,000	=	$1,000,000		.40 (1)	×	$1,000,000	=	$ 400,000		$4,000 (4)
5	B		100	×	6,000	=	600,000		.24 (2)	×	1,000,000	=	240,000		2,400 (5)
6	C		200	×	4,500	=	900,000		.36 (3)	×	1,000,000	=	360,000		1,800 (6)
7							$2,500,000						$1,000,000		
8															
9	(1) $1,000,000 ÷ 2,500,000; (2) $600,000 ÷ 2,500,000; (3) $900,000 ÷ 2,500,000														
10	(4) $400,000 ÷ 100 lots; (5) $240,000 ÷ 100 lots; (6) $360,000 ÷ 200 lots														

Sheet1

With the cost per lot calculated in Example 8.7, Woodland can then determine gross profit upon selling the lots, as shown in Example 8.8.

Example 8.8
Gross Profit Using Relative Sales Value

FACTS Use the information about Woodland Developers from Example 8.7. Woodland sold 77 Area A lots, 80 Area B lots, and 100 Area C lots.

QUESTION How would you compute Woodland's cost of lots sold and gross profit?

SOLUTION

AutoSave Off

	A	B	C	D	E	F	G	H	I	J	K
1	**Woodland Developers Gross Profit**										
2											
3	**Areas**		**Number of Lots Sold**		**Cost per Lot**		**Cost of Lots Sold**		**Sales**		**Gross Profit**
4	A		77	×	$4,000	=	$308,000		$ 770,000 (1)		$ 462,000
5	B		80	×	2,400	=	192,000		480,000 (2)		288,000
6	C		100	×	1,800	=	180,000		450,000 (3)		270,000
7							$680,000		$1,700,000		$1,020,000
8											
9	(1) $10,000/lot × 77 lots; (2) $6,000/lot × 80 lots; (3) $4,500/lot × 100 lots										

Sheet1

As indicated in the worksheet, the cost of lots sold is $680,000, and the gross profit is $1,020,000. The ending inventory is $320,000 ($1,000,000 beginning inventory – $680,000 cost of goods sold).

Woodland also can compute its ending inventory amount another way than the relative sales value (see Example 8.7).

① → ② → ③

The ratio of cost to selling price for all the lots is $1 million divided by $2,500,000, or **40%.**

Accordingly, if the total sales price of lots sold is $1,700,000, then the cost of the lots sold is 40% of $1,700,000, or **$680,000.**

The inventory of lots on hand is then $1 million less $680,000, or **$320,000.**

Purchase Commitments—A Special Problem

In many lines of business, a company's survival and continued profitability depends on it having a sufficient stock of merchandise to meet customer demand. Consequently, a company often makes purchase commitments.

- **Purchase commitments** are agreements to buy inventory weeks, months, or even years in advance.
- Purchase commitments are popular because the buyer can secure a supply of inventory and the seller knows it has a sale of its goods at a given price.

Usually, it is not necessary for the buyer to make any journal entries to record purchase commitments of goods that the seller has not shipped. Ordinary orders, for which the buyer and seller will determine prices at the time of shipment, and **which are subject to cancellation**,

Underlying Concepts

Reporting the loss is *conservative*. However, reporting the decline in market price is debatable because no asset is recorded. This area demonstrates the need for good definitions of assets and liabilities.

do not represent either an asset or a liability to the buyer. Therefore, the buyer does not record the purchase commitments or report them in the financial statements.

What happens, though, if a buyer enters into a **noncancelable** purchase contract? Is the purchase commitment recorded in the financial statements because it is noncancelable?

- The answer is that it depends on the relationship between the current year-end market price of the good and the agreed upon contract (selling) price.
- If the contract price is greater than the market price and the buyer expects to realize a loss, the buyer should recognize a loss in the period during which such declines in market value take place (see **Underlying Concepts**). **[5]**[4]

While there is risk in entering into purchase commitments, there may be an even greater risk in not securing inventory at a good price. As you can see from the disclosures shown in **Illustration 8.6**, purchase commitments are a common practice for a variety of companies to ensure they have the inventory they need, when they need it.

ILLUSTRATION 8.6 Purchase Commitment Disclosures

Company	Disclosure on Purchase Commitments
Starbucks	As of September 29, 2019, we had committed to purchasing green coffee totaling $854 million under fixed-price contracts and an estimated $203 million under price-to-be-fixed contracts….
Amazon.com	During the normal course of business, in order to manage manufacturing lead times and help ensure adequate supply, we enter into agreements with contract manufacturers and suppliers for certain electronic device components. A portion of our reported purchase commitments arising from these agreements consists of firm, non-cancellable commitments. These commitments are based on forecasted customer demand. If we reduce these commitments, we may incur additional costs. We also have firm, non-cancellable commitments for certain products offered in our Whole Foods Market stores.
Apple	The Company orders components for its products and builds inventory in advance of product announcements and shipments. Manufacturing purchase obligations cover the Company's forecasted component and manufacturing requirements, typically for periods up to 150 days. Because the Company's markets are volatile, competitive, and subject to rapid technology and price changes, there is a risk the Company will forecast incorrectly and order or produce excess or insufficient amounts of components or products, or not fully utilize firm purchase commitments.
Target	Purchase obligations, which include all legally binding contracts such as firm commitments for inventory purchases, merchandise royalties, equipment purchases, marketing-related contracts, software acquisition/license commitments, and service contracts, were $676 million and $992 million as of February 1, 2020 and February 2, 2019, respectively. These purchase obligations are primarily due within three years and recorded as liabilities when goods are received or services rendered.

Source: Company 10-K reports.

Example 8.9 shows the accounting behind a purchase commitment.

[4] There is a long-standing controversy on the accounting in this area. See, for example, Yuji Ijiri, *Recognition of Contractual Rights and Obligations, Research Report* (Stamford, Conn.: FASB, 1980), who argues that companies should capitalize firm purchase commitments. "Firm" means that it is unlikely that companies can avoid performance under the contract without a severe penalty.

Example 8.9 Purchase Commitment

FACTS Assume that **Starbucks** signed a contract early in 2025 to purchase coffee beans in 2026 at a price of $10,000,000. Assume further that the market price of the coffee beans on December 31, 2025, dropped to $7,000,000.

QUESTIONS

a. What entry does Starbucks make on December 31, 2025, related to the purchase commitment?

b. What entry does Starbucks make on March 30, 2026, when it receives the coffee beans at a cost of $10 million?

SOLUTION

a. To record the loss on the purchase commitment:

December 31, 2025

Loss on Purchase Commitments	3,000,000	
Estimated Liability on Purchase Commitments		3,000,000

Starbucks would report the loss in the income statement under "Other expenses and losses." And because the contract is to be executed within the next fiscal year, Starbucks would report the Estimated Liability on Purchase Commitments in the current liabilities section on the balance sheet.

b. To record purchase of the inventory:

March 30, 2026

Purchases (Inventory)	7,000,000	
Estimated Liability on Purchase Commitments	3,000,000	
Cash		10,000,000

The result of the purchase commitment was that Starbucks paid $10 million for a contract worth only $7 million. It recorded the loss in the previous period—when the price declined.

Let's continue with Example 8.9. If Starbucks can partially or fully recover the contract price before it receives the coffee beans, it reduces the Estimated Liability on Purchase Commitments. In that case, it then reports in the period of the price increase a resulting gain for the amount of the partial or full recovery. For example, say that drought conditions in Latin America has decreased the global supply of coffee beans, thereby increasing the market value of Starbucks' inventory from its current $7,000,000 to $8,000,000. The entry to record the gain on the purchase commitment is as follows.

Estimated Liability on Purchase Commitments	1,000,000	
Gain on Purchase Commitments		1,000,000

If the market price at the time Starbucks receives the coffee beans is more than $2,000,000 below the contract price, Starbucks will have to recognize an additional loss and record the purchase at the lower-of-cost-or-net realizable value.

In general, it is not necessary for the buyer to make any journal entries to reflect commitments for purchases of goods that the seller has not shipped.

- Ordinary orders, for which the buyer and seller will determine prices at the time of shipment and **which are subject to cancellation**, do not represent either an asset or a liability to the buyer.[5]
- This is because **the contract is "executory" in nature—**neither party has performed nor fulfilled its part of the contract.

However, if material, the buyer should disclose such contract details in a note to its financial statements.

[5] Appendix 16A provides a complete discussion of hedging and the use of derivatives such as futures.

Put It into Practice LO 8.3

Account for Relative Sales Value and Purchase Commitments

FACTS Remote, Inc. buys 500 USB speaker/microphone headsets from a distributor that is experiencing a decline in demand for those products due to the growing popularity of Bluetooth technology. The purchase price for the headsets is $8,000. Bell will group the headsets into three price categories for resale, as indicated below.

Group	No. of Headsets	Price per Headset
1	50	$10
2	400	20
3	50	30

INSTRUCTIONS

a. Determine the cost per headset for each group, using the relative sales value method.

b. At December 31, 2025, Remote has outstanding noncancelable purchase commitments for 12,000 USB cords, at $2.00 per cord, which is raw material for a variety of Remote's products. The company prices its raw material inventory at cost or net realizable value, whichever is lower.

1. Assuming that the market price as of December 31, 2025, is $2.30 per cord, how would you report this matter in the accounts and statements? Explain.

2. Assuming that the market price as of December 31, 2025, is $1.70 per cord, instead of $2.30, how would you report this situation in the accounts and statements?

3. Give the entry in January 2026, when the cord shipment is received, assuming that the situation given in part (b2) existed at December 31, 2025, and that the market price in January 2026 is $1.70 per cord. Give an explanation of your treatment.

SOLUTION

a. Group	Number of Headsets	×	Sales Price per Headsets	=	Total Sales Price	Relative Sales Price*	×	Total Cost	=	Cost Allocated to Headsets	Cost per Headset**
1	50		$10		$ 500	5/100		$8,000		$ 400	$ 8
2	400		20		8,000	80/100		8,000		6,400	16
3	50		30		1,500	15/100		8,000		1,200	24
					$10,000					$8,000	

*5/100 = $500/$10,000, 80/100 = $8,000/$10,000; 15/100 = $1,500/$10,000
**$8 = $400/50; $16 = $6,400/400; $24 = $1,200/50

b. 1. If the commitment is material in amount, there should be a note disclosure sheet stating the nature and extent of the commitment. The note may also disclose the market price of the materials.

2. The drop in the market price of the commitment should be charged to operations in the current year. The following entry would be made.

Loss on Purchase Commitments	3,600	
Estimated Liability on Purchase Commitments [12,000 × ($2.00 – $1.70)]		3,600

The entry is made because a loss in utility has occurred during the period in which the market decline took place. The estimated liability account should be included among the current liabilities on the balance sheet, with an appropriate footnote indicating the nature and extent of the commitment. This liability indicates the minimum obligation on the commitment contract at the present time—the amount that would have to be forfeited in case of breach of contract.

3. Assuming the $3,600 market decline entry was made on December 31, 2025, as indicated in part (b2), the entry when the materials are received in January 2026 would be:

Raw Materials	20,400	
Estimated Liability on Purchase Commitments	3,600	
Accounts Payable		24,000

This entry records the raw materials at the actual cost ($1.70 per unit), eliminates the $3,600 liability set up at December 31, 2025, and records the contractual liability for the purchase (at $2.00 per unit). Cost of Goods Sold in 2026 is $20,400. The additional cost of $3,600 is reported in income in 2025.

8.4 The Gross Profit Method of Estimating Inventory

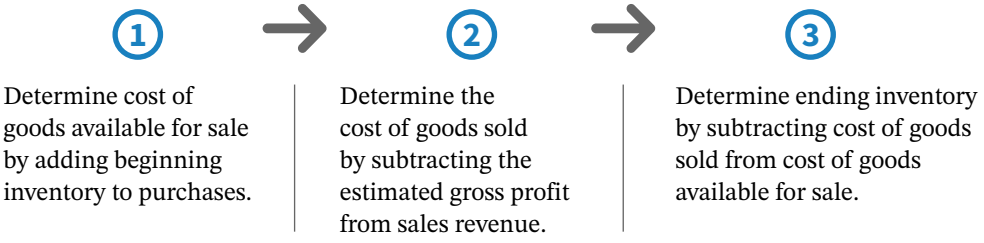
LEARNING OBJECTIVE 4

Determine ending inventory by applying the gross profit method.

Gross profit is an important computation for retail companies like **Best Buy**, **Costco**, and **Target** because it gives investors information to evaluate the profitability of a company's selling activities. Gross profit also is useful in another connection, which is to determine inventory when a physical count is not practicable. Here are two situations where it might be used to compute inventory.

1. As the junior auditor on your first audit assignment, you are tasked with developing an estimate of inventory on hand as part of your interim review procedures. However, you are the only staff assigned to this part of the audit and there are not enough hours budgeted to permit a full count of the inventory.
2. You are the manager of the lumber warehouse for Lowery Stores. Unfortunately, a fire over the weekend destroyed all the inventory on hand. To file an insurance claim, your supervisor asks if you can provide the dollar amount of inventory lost. Coming up with a value will be a challenge since the last time a physical inventory was taken was at the beginning of the month.

What would you do in these two situations? Is there a way to come up with a reasonable measure of inventory on hand in these two situations? The answer is yes—you use the gross profit method for determining the inventory. To use the **gross profit method** to determine ending inventory, you follow these steps, using the accounting records on hand related to inventory.


1
Determine cost of goods available for sale by adding beginning inventory to purchases.
2
Determine the cost of goods sold by subtracting the estimated gross profit from sales revenue.
3
Determine ending inventory by subtracting cost of goods sold from cost of goods available for sale.

Let's continue with Lowery Stores in Example 8.10 to show how the gross profit method works.

Example 8.10
Gross Profit Method

FACTS Lowery Stores has a beginning lumber inventory of $60,000 and purchases of $200,000, both at cost. Sales at selling price amount to $280,000. The gross profit on selling price is 30%.

QUESTION How would you determine the ending inventory amount for Lowery if it uses the gross profit method to estimate ending inventory, given the fire damage?

SOLUTION

Beginning inventory (at cost)		$ 60,000
Purchases (at cost)		200,000
Cost of goods available for sale		260,000
Sales revenue (at selling price)	$280,000	
Less: Gross profit (30% of $280,000)	84,000	
Estimated cost of goods sold		(196,000)
Estimated ending inventory (at cost)		$ 64,000

The current period's records contain all the information Lowery needs to compute inventory at cost, except for the gross profit percentage. Lowery determines the gross profit percentage by reviewing company policies or prior period records. In some cases, companies must adjust this percentage if they consider prior periods unrepresentative of the current period.

Computation of Gross Profit Percentage

In most situations, the **gross profit percentage** is stated as a percentage of selling price.In the previous example, Lowery used a 30% gross profit on sales. Gross profit on selling price is the common method for quoting the profit for several reasons.

- Many companies state goods on a retail basis, not a cost basis.
- A profit quoted on selling price is lower than one based on cost. This lower rate gives a favorable impression to the consumer.
- The gross profit based on selling price can never exceed 100%.[6]

In Example 8.10, the gross profit was a given. To see how to compute a gross profit percentage, assume that an article cost $15 and sells for $20, a gross profit of $5. As shown in the following computations, this markup is ¼ or 25% of retail, and ⅓ or, 33⅓% of cost.

$$\frac{\textbf{Markup}}{\textbf{Retail}} = \frac{\$5}{\$20} = 25\% \text{ at retail} \qquad \frac{\textbf{Markup}}{\textbf{Cost}} = \frac{\$5}{\$15} = 33\tfrac{1}{3}\% \text{ on cost}$$

Although companies normally compute the gross profit based on selling price, you should understand the basic relationship between markup on cost and markup on selling price. For example, assume that a company marks up a given item by 25%. What, then, is the **gross profit on selling price**? To find the answer, assume that the item sells for $1. In this case, the following formula applies.

$$\textbf{Cost} + \textbf{Gross Profit} = \textbf{Selling Price}$$
$$C + .25C = SP$$
$$(1 + .25)C = SP$$
$$1.25C = \$1.00$$
$$C = \$0.80$$

[6]The terms *gross margin percentage, rate of gross profit,* and *percentage markup* are synonymous, although companies more commonly use *markup* in reference to cost and *gross profit* in reference to sales.

The gross profit equals \$0.20 (\$1.00 − \$0.80). The rate of gross profit on selling price is therefore 20% (\$0.20 ÷ \$1.00).

Conversely, assume that the gross profit on selling price is 20%. What is the **markup on cost**? To find the answer, again assume that the item sells for \$1. The same formula holds:

$$\textbf{Cost + Gross Profit = Selling Price}$$
$$C + .20SP = SP$$
$$C = (1-.20)SP$$
$$C = .80SP$$
$$C = .80(\$1.00)$$
$$C = \$0.80$$

As in the previous example, the markup equals \$0.20 (\$1.00 − \$0.80). The markup on cost is 25% (\$0.20 ÷ \$0.80). Retailers use the following formulas to express these relationships.

1. **Gross Profit on Selling Price** $= \dfrac{\textbf{Percentage Markup on Cost}}{\textbf{100\% + Percentage Markup on Cost}}$

2. **Percentage Markup on Cost** $= \dfrac{\textbf{Gross Profit on Selling Price}}{\textbf{100\% − Gross Profit on Selling Price}}$

To understand how to use these formulas, consider their application in Example 8.11

Example 8.11 Gross Profit Formulas

FACTS Tea Time has **gross profit on selling price** of 20% on its jasmine tea and 25% **gross profit on selling price** on its matcha green tea latte. Tea Time has a 25% **markup on cost** for its herbal tea and a 50% **markup on cost** on its chai tea.

QUESTIONS

a. What is percentage markup on cost for jasmine and matcha tea?

b. What is the gross profit on selling price for herbal and chai tea?

SOLUTION

	Gross Profit on Selling Price		Percentage Markup on Cost
a.	Given: 20% (jasmine)	→	$\dfrac{.20}{1.00 - .20} = 25\%$
	Given: 25% (matcha)	→	$\dfrac{.25}{1.00 - .25} = 33\frac{1}{3}\%$
b.	$\dfrac{.25}{1.00 + .25} = 20\%$	→	Given: 25% (herbal)
	$\dfrac{.50}{1.00 + .50} = 33\frac{1}{3}\%$	→	Given: 50% (chai)

Because selling price exceeds cost and with the gross profit amount being the same for both, **gross profit on selling price will always be less than the related percentage based on cost**. Note that companies do not multiply sales by a cost-based markup percentage. Instead, they must convert the gross profit percentage to a percentage based on selling price.

Evaluation of Gross Profit Method

Illustration 8.7 summarizes the three main disadvantages of the gross profit method.

ILLUSTRATION 8.7
Disadvantages of Gross Profit Method

Major Disadvantages	Result
Estimated value	Companies must take a physical inventory once a year to verify the inventory. The gross profit test does not take into consideration the possibility that some goods have been damaged or stolen.
Generally relies on past percentages	Although the past often provides answers to the future, a current rate is more appropriate. Note that whenever significant fluctuations occur, companies should adjust the percentage as appropriate.
Varying gross profits require caution	Frequently, a store or department handles merchandise with widely varying rates of gross profit. In these situations, the company may need to apply the gross profit method by subsections, lines of merchandise, or a similar basis that classifies merchandise according to their respective rates of gross profit.

The gross profit method is normally unacceptable for financial reporting purposes because it provides only an estimate. GAAP requires a physical inventory as additional verification of the inventory indicated in the records. Nevertheless, GAAP permits the gross profit method to determine ending inventory for interim (generally quarterly) reporting purposes, provided a company discloses the use of this method. Note that the gross profit method will follow closely the inventory method used (FIFO, LIFO, average-cost) because it relies on historical records.

Put It into Practice LO 8.4
Estimate Inventory Using Gross Profit Method

FACTS Marling Corporation's April 30 inventory was washed away in a hurricane storm surge. The beginning inventory on January 1 was $300,000, and purchases for January through April totaled $700,000. Sales revenue for the same period was $1,200,000. Marling's normal gross profit percentage is 40% on sales.

INSTRUCTIONS Using the gross profit method, estimate Marling's April 30 inventory that was lost in the storm surge.

SOLUTION

Beginning inventory		$300,000
Purchases		700,000
Cost of goods available for sale		1,000,000
Sales revenue	$1,200,000	
Less: Gross profit (.40 × 1,200,000)	480,000	
Estimated cost of goods sold		720,000
Estimated ending inventory destroyed in fire		$280,000

8.5 Retail Inventory Method

LEARNING OBJECTIVE 5

Determine ending inventory by applying the retail inventory method.

Accounting for inventory in a retail operation can present several challenges. Consider this situation. You oversee the housewares department at a **Target** store. It is the end of the

quarter and you need to determine inventory for the quarter as part of the quarterly planning process. What should you do? One option is to take a physical count of the inventory. Does this mean you will have to take a physical inventory every month or quarter? No way! There are 12 aisles in your department, with hundreds of unique products. That is why a physical count is only done once a year (and usually at a time when inventories levels are at their lowest).

This is the challenge faced by many retailers, such as **Home Depot**, **Costco**, or **American Eagle Outfitters**—high-volume retailers that have many different types of merchandise. Other retailers with certain types of inventory, such as cars or pianos, can use the specific identification method to value their inventories. It is not so easy in other retail settings. Think how difficult it would be to determine the cost of each sale, enter costs on the tickets (or barcodes), change the costs to reflect declines in value of the merchandise, and allocate costs such as transportation for thousands of items. A solution to this challenge is to use the retail inventory method.

- The **retail inventory method** has the advantage that enables a company like **Best Buy** to approximate the inventory balance **without a physical count**.
- To avoid a potential overstatement of the inventory, companies still make periodic inventory counts, which are especially important in retail operations where loss due to shoplifting or breakage is common.

The retail inventory method is particularly useful in the situations shown in **Illustration 8.8**.

ILLUSTRATION 8.8 Advantages of Retail Inventory Method

When to Use the Retail Inventory Method	Advantage
Interim reports	Provides a fairly quick and reliable measure of inventory.
To estimate losses	Is helpful to insurance adjusters who use this method to estimate losses from fire, flood, or other type of casualty.
As a control device	Forces companies to explain any deviations from a physical count at the end of the year.
To expedite the physical count	Saves time and expense because the crew taking the physical inventory need record only the retail price of each item, not each item's invoice cost, thereby saving time and expense.

Use of the retail inventory method is quite common. For example, **Kroger**, **Target**, and **Best Buy** use the retail inventory method. To gain the advantages of the retail method, these companies compile the inventories at retail prices and then use the historical observable relationship between cost and retail prices to convert retail prices to cost. Specifically, the retail method requires that the retailer keep a record of (1) the total cost and retail value of goods purchased, (2) the total cost and retail value of the goods available for sale, and (3) the sales for the period.

Here is how it works at a company like **Best Buy**.

Beginning with the retail value of the goods available for sale (beginning inventory plus purchases, all based on retail values), Best Buy deducts the sales revenue for the period. This calculation determines an estimated inventory (goods on hand) at retail.

The company next computes the **cost-to-retail ratio** for all goods. This ratio is determined by dividing the total goods available for sale at cost by the total goods available at retail price.

Finally, to obtain ending inventory at cost, Best Buy applies the cost-to-retail ratio to the ending inventory valued at retail.

In Example 8.12, we put some numbers to this method.

Example 8.12
Retail Inventory Method

FACTS Kelvie Company's beginning inventory has a cost of $14,000 and a retail price of $20,000. The company has also purchased inventory at a cost of $63,000, which has a retail price of $90,000. Kelvie has sales revenue for the period of $85,000.

QUESTION How would you compute ending inventory at both retail and cost using the retail inventory method?

SOLUTION

	Cost	Retail
Beginning inventory	$14,000	$ 20,000
Purchases	63,000	90,000
Goods available for sale	$77,000	110,000
Less: Sales revenue		85,000
Ending inventory, at retail		$ 25,000
Cost-to-retail ratio ($77,000 ÷ $110,000) = 70%		
Ending inventory, at cost (.70 × $25,000) = $17,500		

There are different versions of the retail inventory method: the conventional method (based on lower-of-average-cost-or-market), the cost method, the LIFO retail method, and the dollar-value LIFO retail method (we discuss these latter two approaches in the appendix). Regardless of which version a company uses, the IRS, various retail associations, and the accounting profession all sanction use of the retail inventory method.

Retail-Method Concepts

The amounts shown in the "Retail" column of Example 8.12 represent the original retail prices, assuming no price changes. In practice, though, retailers frequently mark up or mark down the prices they charge buyers. The term **markup** means an additional markup of the original retail price. (In another context, such as the earlier gross profit discussion, we often think of markup, based on cost.)

- **Markup cancellations** are decreases in prices of merchandise that the retailer had marked up above the original retail price.
- **Markdowns** are decreases in the original sales prices. Such cuts in sales prices may be necessary because of a decrease in the general level of prices, special sales, soiled or damaged goods, overstocking, and market competition.
- **Markdown cancellations** occur when the markdowns are later offset by increases in the prices of goods that the retailer had marked down—such as after a one-day sale, for example.

Neither a markup cancellation nor a markdown cancellation can exceed the original markup or markdown.

Example 8.13
Retail-Method Concepts

FACTS Designer Clothing Store recently purchased 100 dress shirts from Marroway Inc. The total cost for these shirts was $1,500, or $15 a shirt. Designer Clothing established the selling price on these shirts at $30 a shirt. The shirts were selling quickly in anticipation of Father's Day, so the manager added a markup of $5 per shirt. This markup made the price too high for customers, and sales slowed. The manager then reduced the price to $32. Right after Father's Day, the manager marked down the remaining shirts by $9. The manager later increases the price by $1.

QUESTION What is the final price after the markups, markup cancellations, markdowns, and markdown cancellations?

SOLUTION

The selling price of the shirts was	$30
The company had a markup of	5
The total price was reduced by $3, which is a markup cancellation	(3)
The company then reduced by price by $9 to $23, which results in a markup cancellation of $2 ($32 – $30) and a markdown of $7	(9)
The company then increases the price by $1 to $24 (markdown cancellation)	1
The total price is then	$24

Retail Inventory Method with Markups and Markdowns—Conventional Method

Retailers use markup and markdown concepts in developing the proper inventory valuation at the end of the accounting period. To obtain the appropriate inventory figures, companies must give proper treatment to markups, markup cancellations, markdowns, and markdown cancellations.

To illustrate the different possibilities, consider the data for In-Fusion Inc., shown in **Illustration 8.9**. In-Fusion can calculate its ending inventory at cost under two assumptions, A and B. (We'll explain the reasons for the two later.)

ILLUSTRATION 8.9 Retail Inventory Method with Markups and Markdowns

	Cost	Retail
Beginning inventory	$ 500	$ 1,000
Purchases (net)	20,000	35,000
Markups		3,000
Markup cancellations		1,000
Markdowns		2,500
Markdown cancellations		2,000
Sales (net)		25,000

In-Fusion Inc.

	Cost		Retail
Beginning inventory	$ 500		$ 1,000
Purchases (net)	20,000		35,000
Merchandise available for sale	20,500		36,000
Add: Markups		$3,000	
Less: Markup cancellations		1,000	
Net markups			2,000
	20,500		38,000
(A) Cost-to-retail ratio = $\frac{\$20,500}{\$38,000} = 53.9\%$			
Less:			
Markdowns		2,500	
Markdown cancellations		(2,000)	
Net markdowns			500
	$20,500		37,500
(B) Cost-to-retail ratio = $\frac{\$20,500}{\$37,500} = 54.7\%$			
Less: Sales (net)			25,000
Ending inventory, at retail			$12,500

Assumption A: Computes a cost ratio after markups (and markup cancellations) but before markdowns (and markdown cancellations).

Assumption B: Computes a cost ratio after both markups (and mark-up cancellations) and markdowns (and markdown cancellations).

The computations for In-Fusion are:

Ending Inventory at Retail × Cost Ratio = Value of Ending Inventory

Assumption **A**: $12,500 × .539 = $6,737.50
Assumption **B**: $12,500 × .547 = $6,837.50

The question becomes: Which assumption and which cost ratio should In-Fusion use to compute the ending inventory valuation? The answer depends on which retail inventory method In-Fusion chooses.

One approach uses only assumption A (a cost ratio using markups but not markdowns). It approximates the lower-of-average-cost-or-market. We refer to this approach as the **conventional retail inventory method**, or the **lower-of-cost-or-market approach**.[7]

[7]As a result, companies using the retail inventory method are eligible for the exception to LCNRV previously discussed for LIFO method companies. Specifically, implementation of the conventional retail inventory method results in a reasonable approximation for LCNRV in many situations, without the additional cost to estimate net realizable value.

To understand why this method considers only the markups, not the markdowns, in the cost percentage, you must understand how a retail business operates.

- A markup normally indicates an increase in the market value of the item. On the other hand, a markdown means a decline in the utility of that item.
- Therefore, to approximate the LCM, we would consider markdowns a current loss and so would not include them in calculating the cost-to-retail ratio.
- Omitting the markdowns would make the cost-to-retail ratio lower, which leads to an approximate LCM, which provides a more conservative measure.

An example will make the distinction between the two methods clear. Assume In-Fusion purchased two items for $5 apiece; the original sales price was $10 each. One item was subsequently written down to $2. Assuming no sales for the period, if **markdowns are considered** in the cost-to-retail ratio; this is assumption B—the **cost method**, under which we compute the ending inventory as shown in **Illustration 8.10**.

Markdowns Included in Cost-to-Retail Ratio

	Cost	Retail
Purchases	$10	$20
Less: Markdowns		8
Ending inventory, at retail		$12

Cost-to-retail ratio $= \frac{\$10}{\$12} = 83.3\%$

Ending inventory, at cost ($12 × .833) = $10

ILLUSTRATION 8.10 Retail Inventory Method Including Markdowns—Cost Method

- This approach, referred to as the cost method, reflects an **average cost** of the two items of the commodity without considering the loss on the one item.
- It values ending inventory at $10.

If **markdowns are not considered** in the cost-to-retail ratio (assumption A—the **conventional retail method**), we compute the ending inventory as shown in **Illustration 8.11**.

Markdowns not Included in Cost-to-Retail Ratio

	Cost	Retail
Purchases	$10	$20
Cost-to-retail ratio $= \frac{\$10}{\$20} = 50\%$		
Less: Markdowns		8
Ending inventory, at retail		$12

Ending inventory, at cost ($12 × .50) = $6

ILLUSTRATION 8.11 Retail Inventory Method Excluding Markdowns—Conventional Method (LCM)

Under this approach, the conventional retail method—in which markdowns are **not considered**—ending inventory would be $6.

- The inventory valuation of $6 reflects two inventory items, one inventoried at $5 and the other at $1.
- It reflects the fact that In-Fusion reduced the sales price from $10 to $2, and reduced the cost from $5 to $1.[8]

[8] This figure is not really market (replacement cost), but it is net realizable value less the normal margin that is allowed. In other words, the sale price of the goods written down is $2, but subtracting a normal margin of 50% ($5 cost, $10 price), the figure becomes $1.

To approximate the LCM, In-Fusion must establish the **cost-to-retail ratio**.

- It does this by dividing the cost of goods available for sale by the sum of the original retail price of these goods plus the net markups.
- This calculation excludes markdowns and markdown cancellations.

Example 8.14 Conventional Retail Inventory Method

FACTS Use the information for In-Fusion Inc. shown in Illustration 8.9.

QUESTION What is the ending inventory for In-Fusion using the conventional retail method?

SOLUTION

	Cost		Retail
Beginning inventory	$ 500		$ 1,000
Purchases (net)	20,000		35,000
Totals	20,500		36,000
Add: Net markups			
Markups		$3,000	
Markup cancellations		1,000	2,000
Totals (goods available for sale)	$20,500	← →	38,000
Less: Net markdowns			
Markdowns		2,500	
Markdown cancellations		(2,000)	500
Sales price of goods available			37,500
Less: Sales (net)			25,000
Ending inventory, at retail			$12,500

$$\text{Cost-to-retail ratio} = \frac{\text{Cost of goods available}}{\text{Original retail price of goods available, plus net markups}}$$

$$= \frac{\$20,500}{\$38,000} = 53.9\%$$

Ending inventory, at lower-of-cost-or-market (.539 × $12,500) = $6,737.50

Because an averaging effect occurs, an exact lower-of-cost-or-market inventory valuation is ordinarily not obtained, but an adequate approximation can be achieved. In contrast, adding net markups and deducting net markdowns yields **approximate cost**.

Special Items Relating to Retail Method

The retail inventory method becomes more complicated when we consider such items as freight-in, purchase returns and allowances, and purchase discounts. In the retail method, we treat such items as follows.

- **Freight costs** are part of the purchase cost.
- **Purchase returns** are ordinarily considered as a reduction of the price at both cost and retail.
- **Purchase discounts and allowances** usually are considered as a reduction of the cost of purchases.

In short, the treatment for the items affecting the cost column of the retail inventory approach follows the computation for cost of goods available for sale.[9]

Note also that **sales returns and allowances** are considered as proper adjustments to gross sales. However, when sales are recorded gross, companies do not recognize **sales discounts**. To adjust for the sales discount account in such a situation would provide an ending inventory figure at retail that would be overvalued.

In addition, a number of special items require careful analysis:

- **Transfers-in** from another department are reported in the same way as purchases from an outside company.
- **Normal shortages** (breakage, damage, theft, shrinkage) should reduce the retail column because these goods are no longer available for sale. Such costs are reflected in the selling price because a certain amount of shortage is considered normal in a retail enterprise. As a result, companies do not consider this amount in computing the cost-to-retail percentage. Rather, to arrive at ending inventory at retail, they show normal shortages as a deduction similar to sales.
- **Abnormal shortages**, on the other hand, are deducted from both the cost and retail columns and reported as a special inventory amount or as a loss. To do otherwise distorts the cost-to-retail ratio and overstates ending inventory.
- **Employee discounts** (given to employees to encourage loyalty, better performance, and so on) are deducted from the retail column in the same way as sales. These discounts should not be considered in the cost-to-retail percentage because they do not reflect an overall change in the selling price.[10]

Illustration 8.12 shows some of these concepts. The company, Extreme Sport Apparel, determines its inventory using the conventional retail inventory method.

Extreme Sport Apparel

	Cost		Retail
Beginning inventory	$ 1,000		$ 1,800
Purchases	30,000		60,000
Freight-in	600		—
Purchase returns	(1,500)		(3,000)
Totals	30,100		58,800
Net markups			9,000
Abnormal shortage	(1,200)		(2,000)
Totals (Goods available for sale)	$28,900	⟷	65,800
Less:			
Net markdowns			1,400
Sales revenue		$36,000	
Sales returns		(900)	35,100
Employee discounts			800
Normal shortage			1,300
Ending inventory, at retail			$27,200

$$\text{Cost-to-retail ratio} = \frac{\$28{,}900}{\$65{,}800} = 43.9\%$$

Ending inventory, at lower-of-cost-or-market (.439 × $27,200) = $11,940.80

ILLUSTRATION 8.12
Conventional Retail Inventory Method—Special Items Included

[9] When the purchase allowance is not reflected by a reduction in the selling price, no adjustment is made to the retail column.

[10] Note that if employee sales are recorded gross, no adjustment is necessary for employee discounts in the retail column.

Evaluation of Retail Inventory Method

Companies like **Gap Inc.**, **Home Depot**, or your local department store use the retail inventory method of computing inventory because it:

- Permits the computation of net income without a physical count of inventory.
- Provides a control measure in determining inventory shortages.
- Provides insurance information in case of a fire, flood, or other casualty.

One characteristic of the retail inventory method is that it **has an averaging effect on varying rates of gross profit**. This can be problematic when companies apply the method to an entire business, where rates of gross profit vary among departments. There is no allowance for possible distortion of results because of such differences. Companies refine the retail method under such conditions by computing inventory separately by departments or by classes of merchandise with similar gross profits. In addition, the reliability of this method assumes that the distribution of items in inventory is similar to the "mix" in the total goods available for sale.

As popular as the retail method might seem, not all companies use it. And that could create some challenges for investors. The challenge arises from the differences in the treatment of markdowns under the cost and retail methods.

- Under the cost method, markdowns are not recorded until merchandise is sold.
- Under the retail method, markdowns are recorded immediately (reflected in the cost-to-retail ratio).

Depending on the method used, the timing of when the markdown affects cost of goods sold (and gross margin) varies.

So for a cost-method retailer with a lot of clearance items sitting on the shelves, the effect of a markdown will not hit income until, say, the fourth quarter when the goods are sold at the discounted price. Under the retail method, the margin hit happens right away. Some specialty retailers such as **Abercrombie & Fitch** and **L Brands** use the cost method. Department stores such as **TJX Companies** and **Macy's** tend to use the retail method. So investors who want to make valid comparisons need to be tuned into the use of retail or cost methods, even for companies in the same industry.

Put It into Practice LO 8.5

Calculate Ending Inventory Using the Retail Method

FACTS Boylen Inc. had beginning inventory of $24,000 at cost and $40,000 at retail. Net purchases were $240,000 at cost and $350,000 at retail. Net markups were $10,000, net markdowns were $7,000, and sales revenue was $301,000.

INSTRUCTIONS Compute ending inventory at cost using the conventional retail method.

SOLUTION

	Cost	Retail
Beginning inventory	$ 24,000	$ 40,000
Net purchases	240,000	350,000
Net markups		10,000
Totals	$264,000	400,000
Less:		
Net markdowns		7,000
Sales revenue		301,000
Ending inventory, at retail		$ 92,000

Cost-to-retail ratio: $264,000 ÷ $400,000 = 66%

Ending inventory, at lower-of cost-or-market (.66 × $92,000) = $60,720

8.6 Presentation and Decision Analysis

LEARNING OBJECTIVE 6

Explain how to report and analyze inventory.

Presentation of Inventories

Financial reporting for inventories is extensive. Here are the major types of disclosures provided:

- The basis on which a company states its inventory amounts (lower-of-cost-or-net realizable value or lower-of-cost-or-market).
- The method used in determining cost (specific identification, FIFO, average-cost, LIFO).
- The composition of inventory. For example, a manufacturer should report the relative mix of raw materials, work in process, and finished goods.
- Significant or unusual financing arrangements relating to inventories. Examples include transactions with related parties, product financing arrangements, noncancelable purchase commitments, involuntary liquidation of LIFO inventories, and pledging of inventories as collateral. Companies should present inventories pledged as collateral for a loan in the current assets section rather than as an offset to the liability.

Inventory standards require the consistent application of costing methods from one period to the next.

Decision Analysis of Inventories

The amount of inventory that a company carries can have significant economic consequences. As a result, companies must manage inventories. But, inventory management is a double-edged sword, as shown in Illustration 8.13. It requires constant attention.

- On the one hand, management wants to stock a great variety and quantity of items. Doing so will provide customers with the greatest selection. However, such an inventory policy may incur excessive carrying costs (e.g., investment, storage, insurance, taxes, obsolescence, and damage).
- On the other hand, low inventory levels lead to stockouts, lost sales, and disgruntled customers.

Using financial ratios helps companies to chart a middle course between these two dangers. Common ratios used in the management and evaluation of inventory levels are inventory turnover and a related measure, average days to sell inventory.

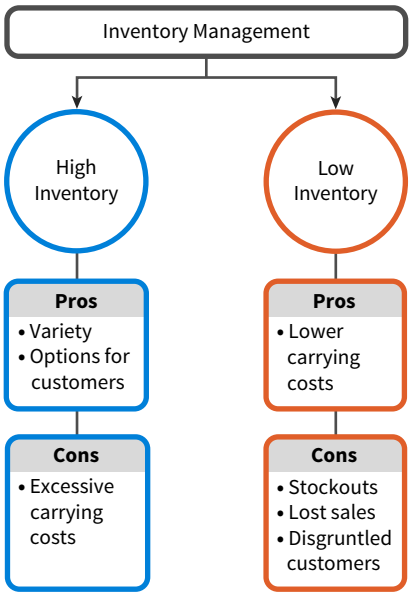


ILLUSTRATION 8.13 The Pros and Cons of Inventory Management

Inventory Turnover

The **inventory turnover** measures the number of times on average a company sells the inventory during the period. It measures the liquidity of the inventory. To compute inventory turnover, divide the cost of goods sold by the average inventory on hand during the period.

Barring seasonal factors, analysts compute average inventory from beginning and ending inventory balances. For example, in a recent annual report, **Kellogg Company** reported a beginning inventory of $1,238 million, an ending inventory of $1,217 million, and cost of goods sold of $7,901 million for the year. The following shows the inventory turnover formula and Kellogg Company's ratio computation.

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \text{Inventory Turnover}$$

$$\frac{\$7{,}901}{(\$1{,}217 + \$1{,}238) \div 2} = 6.44 \text{ times}$$

Average Days to Sell Inventory

A variant of the inventory turnover is the **average days to sell inventory**. This measure represents the average number of days' sales for which a company has inventory on hand. For example, the inventory turnover for **Kellogg Company** of 6.44 times divided into 365 is approximately 56.7 days.

There are typical levels of inventory in every industry. However, companies that keep their inventory at lower levels with higher turnovers than those of their competitors, and that still can satisfy customer needs, are the most successful. Consider the implications of inventory management and sustainability. There are many facets to inventory management and a company's focus on environmental, social, and governance (ESG) reporting includes inventory management practices. Investors are increasingly focused on a company's long-term value creation, which includes financial and nonfinancial components.

- More inventory requires more warehouse space, which translates to larger energy consumption, carbon emissions, and an overall larger environmental footprint.
- More inventory can lead to more waste if inventory becomes obsolete.

In addition to the economic consequences of holding the "right" amount of the "right" type of inventory, companies must consider the broader impacts of their inventory management practices. A delicate balance indeed.

APPENDIX **8A**

LIFO Retail Methods

LEARNING OBJECTIVE *7

Determine ending inventory by applying the LIFO retail methods.

A number of retail establishments have changed from the more conventional retail method treatment to a **LIFO retail method**. For example, the world's largest retailer, **Walmart Inc.**, uses the LIFO retail method.

- The primary reason is for the tax advantages associated with valuing inventories on a LIFO basis.
- Adoption of LIFO also results in a better matching of costs and revenues.

The use of LIFO retail is made under two assumptions: (1) stable prices and (2) fluctuating prices.

Stable Prices—LIFO Retail Method

It is much more complex to compute the final inventory balance using a LIFO flow than using the conventional retail method. Under the LIFO retail method, companies like **Walmart**

or **Target** consider **both markups and markdowns** in obtaining the proper cost-to-retail percentage. Furthermore, since the LIFO method is concerned only with the additional layer, or the amount that should be subtracted from the previous layer, the beginning inventory is excluded from the cost-to-retail percentage.

- A major assumption of the LIFO retail method is that the markups and markdowns apply only to the goods purchased during the current period and not to the beginning inventory.
- This assumption is debatable and may explain why some companies do not adopt this method.

Illustration 8A.1 presents the major concepts involved in the LIFO retail method applied to the Hernandez Company. Note that, to simplify the accounting, we have assumed that the price level has remained unchanged.

	Cost	Retail
Beginning inventory—2025	$ 27,000	$ 45,000
Net purchases during the period	346,500	480,000
Net markups		20,000
Net markdowns		(5,000)
Total (excluding beginning inventory)	346,500	495,000
Total (including beginning inventory)	$373,500	540,000
Net sales during the period		(484,000)
Ending inventory, at retail		$ 56,000

Establishment of cost-to-retail percentage under assumptions of LIFO retail ($346,500 ÷ $495,000) = 70%

ILLUSTRATION 8A.1 LIFO Retail Method—Stable Prices

Illustration 8A.2 indicates that the inventory is composed of two layers: the beginning inventory and the additional increase that occurred in the inventory this period (2025). When we start the next period (2026), the beginning inventory will be composed of those two layers. If an increase in inventory occurs again, an additional layer will be added.

Ending Inventory at Retail Prices—2025	Layers at Retail Prices			Cost-to-Retail		Ending Inventory at LIFO Cost
$56,000	2024	$45,000	×	.60*	=	$27,000
	2025	11,000	×	.70	=	7,700
		$56,000				$34,700

$$*\ .60 = \frac{\$27,000}{\$45,000}\ \text{(prior year's cost-to-retail)}$$

ILLUSTRATION 8A.2 Ending Inventory at LIFO Cost, 2025—Stable Prices

However, if the final inventory figure is below the beginning inventory, Hernandez must reduce the beginning inventory starting with the most recent layer. For example, assume that the ending inventory for 2026 at retail is $50,000. **Illustration 8A.3** shows the computation of the ending inventory at cost. Notice that the 2025 layer is reduced from $11,000 to $5,000.

ILLUSTRATION 8A.3 Ending Inventory at LIFO Cost, 2026—Stable Prices

Ending Inventory at Retail Prices—2026	Layers at Retail Prices			Cost-to-Retail		Ending Inventory at LIFO Cost
$50,000 →	2024	$45,000	×	.60	=	$27,000
	2025	5,000	×	.70	=	3,500
		$50,000				$30,500

Fluctuating Prices—Dollar-Value LIFO Retail Method

The previous example simplified the LIFO retail method by ignoring changes in the selling price of the inventory. Let us now assume that a change in the price level of the inventories occurs (as is usual).

- If the price level does change, the company must **eliminate the price change** so as to measure the real increase in inventory, not the dollar increase.
- This approach is referred to as the **dollar-value LIFO retail method**.

To illustrate, assume that the beginning inventory had a retail market value of $10,000 and the ending inventory had a retail market value of $15,000. Assume further that the price level has risen from 100 to 125. It is inappropriate to suggest that a real increase in inventory of $5,000 has occurred. Instead, the company must deflate the ending inventory at retail, as the computation in **Illustration 8A.4** shows.

ILLUSTRATION 8A.4 Ending Inventory at Retail—Deflated and Restated

Ending inventory, at retail (deflated) ($15,000 ÷ 1.25*)	$12,000	
Beginning inventory at retail	10,000	
Real increase in inventory at retail	$ 2,000	
Ending inventory, at retail on LIFO basis:		
First layer	$10,000	
Second layer ($2,000 × 1.25)	2,500	$12,500

*1.25 = 125 ÷ 100

This approach is essentially the dollar-value LIFO method discussed in Chapter 7. In computing the LIFO inventory under a dollar-value LIFO approach, the company finds the dollar increase in inventory and deflates it to beginning-of-the-year prices. This indicates whether actual increases or decreases in quantity have occurred.

- If an increase in quantities occurs, the company prices this increase at the new index, in order to compute the value of the new layer.
- If a decrease in quantities happens, the company subtracts the decrease from the most recent layers to the extent necessary.

The following computations, based on those in Illustration 8A.1 for Hernandez Company, illustrate the differences between the dollar-value LIFO retail method and the regular LIFO retail approach.

Assume that the current 2025 price index is 112 (prior year = 100) and that the inventory ($56,000) has remained unchanged. In comparing Illustration 8A.1 with **Illustration 8A.5**, note that the computations involved in finding the cost-to-retail percentage are exactly the same. However, the dollar-value method determines the increase that has occurred in the inventory in terms of base-year prices.

	Cost	Retail
Beginning inventory—2025	$ 27,000	$ 45,000
Net purchases during the period	346,500	480,000
Net markups		20,000
Net markdowns		(5,000)
Total (excluding beginning inventory)	346,500	495,000
Total (including beginning inventory)	$373,500	540,000
Net sales during the period at retail		(484,000)
Ending inventory, at retail		$ 56,000
Establishment of cost-to-retail percentage under assumptions of LIFO retail ($346,500 ÷ $495,000) =		70%
A. Ending inventory, at retail prices deflated to base-year prices ($56,000 ÷ 1.12)		$50,000
B. Beginning inventory (retail) at base-year prices		45,000
C. Inventory increase (retail) from beginning of period		$ 5,000

ILLUSTRATION 8A.5 Dollar-Value LIFO Retail Method—Fluctuating Prices

From this information, we compute the inventory amount at cost, as shown in Illustration 8A.6.

Ending Inventory at Base-Year Retail Prices—2025	Layers at Base-Year Retail Prices			Price Index		Cost-to-Retail		Ending Inventory at LIFO Cost
$50,000 →	2024	$45,000	×	1.00	×	.60	=	$27,000
	2025	5,000	×	1.12	×	.70	=	3,920
		$50,000						$30,920

ILLUSTRATION 8A.6 Ending Inventory at LIFO Cost, 2025—Fluctuating Prices

As Illustration 8A.6 shows, before the conversion to cost takes place, Hernandez must restate layers of a particular year to the prices in effect in the year when the layer was added.

Note the difference between the LIFO approach (stable prices) and the dollar-value LIFO method as indicated in Illustration 8A.7.

	LIFO (stable prices)	LIFO (fluctuating prices)
Beginning inventory	$27,000	$27,000
Increment	7,700	3,920
Ending inventory	$34,700	$30,920

ILLUSTRATION 8A.7 Comparison of Effect of Price Assumptions

The difference of $3,780 ($34,700 − $30,920) results from an increase in the **price** of goods, not from an increase in the **quantity** of goods.

Subsequent Adjustments Under Dollar-Value LIFO Retail

The dollar-value LIFO retail method follows the same procedures in subsequent periods as the traditional dollar-value method discussed in Chapter 7. That is, when a real increase in inventory occurs, Hernandez adds a new layer.

To illustrate, using the data from the previous example, assume that the retail value of the 2026 ending inventory at current prices is $64,800, the 2026 price index is 120% of base-year, and the cost-to-retail percentage is 75%. In base-year dollars, the ending inventory is therefore $54,000 ($64,800 ÷ 1.20). **Illustration 8A.8** shows the computation of the ending inventory at LIFO cost.

ILLUSTRATION 8A.8 Increased Ending Inventory at LIFO Cost, 2026—Fluctuating Prices

Ending Inventory at Base-Year Retail Prices—2026	Layers at Base-Year Retail Prices			Price Index		Cost-to-Retail		Ending Inventory at LIFO Cost
$54,000 →	2024	$45,000	×	1.00	×	.60	=	$27,000
	2025	5,000	×	1.12	×	.70	=	3,920
	2026	4,000	×	1.20	×	.75	=	3,600
		$54,000						$34,520

Conversely, when a real decrease in inventory develops, Hernandez "peels off" previous layers at prices in existence when the layers were added. To illustrate, assume that in 2026 the ending inventory in base-year prices is $48,000. The computation of the LIFO inventory is as shown in **Illustration 8A.9**.

ILLUSTRATION 8A.9 Decreased Ending Inventory at LIFO Cost, 2026—Fluctuating Prices

Ending Inventory at Base-Year Retail Prices—2026	Layers at Base-Year Retail Prices			Price Index		Cost-to-Retail		Ending Inventory at LIFO Cost
$48,000 →	2024	$45,000	×	1.00	×	.60	=	$27,000
	2025	3,000	×	1.12	×	.70	=	2,352
		$48,000						$29,352

The advantages and disadvantages of the lower-of-cost-or-market method (conventional retail) versus LIFO retail are the same for retail operations as for non-retail operations. As a practical matter, a company's selection of which retail inventory method to use often involves determining which method provides a lower taxable income. It might appear that retail LIFO will provide the lower taxable income in a period of rising prices. But this is not always the case.

- LIFO will provide an approximate current cost matching, but it states ending inventory at cost.
- The conventional retail method may have a large write-off because of the use of the lower-of-cost-or-market approach, which may offset the LIFO current cost matching.

Changing from Conventional Retail to LIFO

Because conventional retail is a lower-of-cost-or-market approach, the company must restate beginning inventory to a cost basis when changing from the conventional retail to the LIFO method.[11] The usual approach is to compute the cost basis from the purchases of the prior year, adjusted for both markups and markdowns.[12]

To illustrate, assume that Hakeman Clothing Store employs the conventional retail method but wishes to change to the LIFO retail method beginning in 2026. The amounts shown on the company's books are as follows.

[11] Changing from the conventional retail method to LIFO retail represents a change in accounting principle. We provide an expanded discussion of accounting principle changes in Chapter 21.

[12] A logical question to ask is, "Why are only the purchases from the prior period considered and not also the beginning inventory?" Apparently, the IRS believes that "the purchases-only approach" provides a more reasonable cost basis. The IRS position is debatable. However, for our purposes, it seems appropriate to use the purchases-only approach.

	At Cost	At Retail
Inventory, January 1, 2025	$ 5,210	$ 15,000
Net purchases in 2025	47,250	100,000
Net markups in 2025		7,000
Net markdowns in 2025		2,000
Sales revenue in 2025		95,000

Illustration 8A.10 shows the computation of ending inventory under the **conventional retail method** for 2025.

ILLUSTRATION 8A.10
Conventional Retail Inventory Method

	Cost	Retail
Inventory January 1, 2025	$ 5,210	$ 15,000
Net purchases	47,250	100,000
Net additional markups		7,000
	$52,460	122,000
Net markdowns		(2,000)
Sales revenue		(95,000)
Ending inventory, at retail		$ 25,000
Establishment of cost-to-retail percentage ($52,460 ÷ $122,000) =		43%
December 31, 2025, inventory at cost		
Inventory at retail		$ 25,000
Cost-to-retail ratio		× .43
Ending inventory, at cost under conventional retail		$ 10,750

Hakeman Clothing can then quickly approximate the ending inventory for 2025 under the **LIFO retail method**, as shown in **Illustration 8A.11**.

ILLUSTRATION 8A.11
Conversion to LIFO Retail Inventory Method

December 31, 2025, Inventory at LIFO Cost

$$\text{Ending inventory} = \frac{\text{Retail}}{\$25{,}000} \times \frac{\text{Ratio}}{.45} = \frac{\text{LIFO}}{\$11{,}250}$$

*The cost-to-retail ratio was computed as follows.

$$\frac{\text{Net purchases at cost}}{\text{Net purchases at retail plus markups less markdowns}} = \frac{\$47{,}250}{\$100{,}000 + \$7{,}000 - \$2{,}000} = 45\%$$

The difference of $500 ($11,250 − $10,750) between the LIFO retail method and the conventional retail method in the ending inventory for 2025 is the amount by which the company must adjust beginning inventory for 2026. The entry to adjust the inventory to a cost basis is as follows.

Inventory	500	
Adjustment to Record Inventory at Cost (Cost of Goods Sold)		500

Review and Practice

Key Terms Review

average days to sell inventory 8-32
conventional retail inventory method 8-26
cost-of-goods-sold method 8-5
cost-to-retail ratio 8-24, 8-28
designated market value 8-9
*dollar-value LIFO retail method 8-34
gross profit method 8-19
gross profit percentage 8-20
inventory turnover 8-31
*LIFO retail method 8-32
loss method 8-5
lower limit (floor) 8-8
lower-of-cost-or-market (LCM) 8-7
lower-of-cost-or-net realizable value (LCNRV) 8-2
lump-sum (basket) purchase 8-14
markdown 8-25
markdown cancellations 8-25
markup 8-24
markup cancellations 8-25
net realizable value (NRV) 8-2
net realizable value less a normal profit margin 8-8
purchase commitments 8-15
retail inventory method 8-23
upper limit (ceiling) 8-8

Learning Objectives Review

1 Describe and apply the lower-of-cost-or-net realizable value rule.

If inventory declines in value below its original cost, for whatever reason, a company should write down the inventory to reflect this loss. The general rule is to **abandon the historical cost principle when the future utility (revenue-producing ability) of the asset drops below its original cost**. In these situations, companies write down inventory to net realizable value to record this loss.

2 Describe and apply the lower-of-cost-or-market rule.

For companies that use the LIFO or the retail inventory methods of costing inventory, a better measure for reporting the decline in value of inventories is to use replacement cost subject to certain constraints. Rather than comparing cost to net realizable value, under **the lower-of-cost-or-market approach**, companies compare a "designated market value" of the inventory to cost. Under this exception to the general rule, companies write inventory down to the designated market value to record the loss.

3 Identify other inventory valuation issues.

Companies **value inventory at net realizable value** when (1) there is a controlled market with a quoted price applicable to all quantities, (2) no significant costs of disposal are involved, and (3) the cost figures are too difficult to obtain.

When a company purchases a group of varying units at a single lump-sum price—a so-called basket purchase—the company may allocate the total purchase price to the individual items on the **basis of relative sales value**.

In **accounting for purchase commitments,** the FASB neither excludes nor recommends the recording of assets and liabilities for purchase commitments. However, companies record losses when market prices fall relative to the commitment price.

4 Determine ending inventory by applying the gross profit method.

Companies follow these steps to determine ending inventory by the **gross profit method**. (1) Compute the gross profit percentage on selling price. (2) Compute gross profit by multiplying net sales by the gross profit percentage. (3) Compute cost of goods sold by subtracting gross profit from net sales. (4) Compute ending inventory by subtracting cost of goods sold from total goods available for sale.

5 Determine ending inventory by applying the retail inventory method.

Companies follow these steps to determine ending inventory by the **conventional retail method**. (1) To estimate inventory at retail, deduct the sales for the period from the retail value of the goods available for sale. (2) To find the cost-to-retail ratio for all goods passing through a department or company, divide the total goods available for sale at cost by the total goods available at retail. (3) Convert the inventory valued at retail to approximate cost by applying the cost-to-retail ratio.

6 Explain how to report and analyze inventory.

Accounting standards require financial statement disclosure of (1) the composition of the inventory (in the balance sheet or a separate schedule in the notes), (2) significant or unusual inventory financing arrangements, and (3) inventory costing methods employed (which may differ for different elements of inventory). Accounting standards also require the consistent application of costing methods from one period to another. Common ratios used in the management and evaluation of inventory levels are inventory turnover and average days to sell inventory.

***7 Determine ending inventory by applying the LIFO retail methods.**

The application of LIFO retail is made under two assumptions: stable prices and fluctuating prices.

Procedures under stable prices: (a) Because the LIFO method is a cost method, both markups and markdowns must be considered in obtaining the proper cost-to-retail percentage. (b) Since the LIFO method is concerned only with the additional layer, or the amount that should be subtracted from the previous layer, the beginning inventory is excluded from the cost-to-retail percentage. (c) The markups and markdowns apply only to the goods purchased during the current period and not to the beginning inventory.

Procedures under fluctuating prices: The steps are the same as for stable prices except that in computing the LIFO inventory under a dollar-value LIFO approach, the dollar increase in inventory is found and deflated to beginning-of-the-year prices. Doing so will determine whether actual increases or decreases in quantity have occurred. If quantities increase, this increase is priced at the new index to compute the new layer. If quantities decrease, the decrease is subtracted from the most recent layers to the extent necessary.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. Where there is evidence that the utility of inventory goods, as part of their disposal in the ordinary course of business, will be less than cost, what is the proper accounting treatment?

2. Why are inventories valued at the lower-of-cost-or-net realizable value (LCNRV)? What are the arguments against the use of the LCNRV method of valuing inventories?

3. What approaches may be employed in applying the LCNRV procedure? Which approach is normally used and why?

4. In some instances, accounting principles require a departure from valuing inventories at cost alone. Determine the proper unit inventory price in the following cases using LCNRV.

	Cases				
	1	2	3	4	5
Cost	$15.90	$16.10	$15.90	$15.90	$15.90
Sales value	14.80	19.20	15.20	10.40	17.80
Estimated cost to complete	1.50	1.90	1.65	.80	1.00
Estimated cost to sell	.50	.70	.55	.40	.60

5. What method(s) might be used in the accounts to record a loss due to a price decline in the inventories? Discuss.

6. Explain the rationale for the ceiling and floor in the lower-of-cost-or-market method of valuing inventories.

7. In some instances, accounting principles require a departure from valuing inventories at cost alone. Determine the proper unit inventory price in the following cases, under the lower-of-cost-or-market rule.

	Cases				
	1	2	3	4	5
Cost	$15.90	$16.10	$15.90	$15.90	$15.90
Net realizable value	14.50	19.20	15.20	10.40	16.40
Net realizable value less normal profit	12.80	17.60	13.75	8.80	14.80
Market (replacement cost)	14.80	17.20	12.80	9.70	16.80

8. What factors might call for inventory valuation at sales prices (net realizable value or market price)?

9. Under what circumstances is relative sales value an appropriate basis for determining the price assigned to inventory?

10. At December 31, 2025, Ashley Co. has outstanding purchase commitments for 150,000 gallons, at $6.20 per gallon, of a raw material to be used in its manufacturing process. The company prices its raw material inventory at cost or market, whichever is lower. Assuming that the market price as of December 31, 2025, is $5.90, how would you treat this situation in the accounts?

11. What are the major uses of the gross profit method?

12. Distinguish between gross profit as a percentage of cost and gross profit as a percentage of sales price. Convert the following gross profit percentages based on cost to gross profit percentages based on sales price: 25% and 33⅓%. Convert the following gross profit percentages based on sales price to gross profit percentages based on cost: 33⅓% and 60%.

13. Adriana Co., with annual net sales of $5 million, maintains a markup of 25% based on cost. Adriana's expenses average 15% of net sales. What is Adriana's gross profit and net profit in dollars?

14. A fire destroys all of the merchandise of Assante Company on February 10, 2025. Presented below is information compiled up to the date of the fire.

Inventory, January 1, 2025	$ 400,000
Sales revenue to February 10, 2025	1,950,000
Purchases to February 10, 2025	1,140,000
Freight-in to February 10, 2025	60,000
Rate of gross profit on selling price	40%

What is the approximate inventory on February 10, 2025?

15. What conditions must exist for the retail inventory method to provide valid results?

16. The conventional retail inventory method yields results that are essentially the same as those yielded by the lower-of-cost-or-market method. Explain. Prepare an illustration of how the retail inventory method reduces inventory to market.

17. **a.** Determine the ending inventory under the conventional retail method for the furniture department of Mayron Department Stores from the following data.

	Cost	Retail
Inventory, Jan. 1	$ 149,000	$ 283,500
Purchases	1,400,000	2,160,000
Freight-in	70,000	
Markups, net		92,000
Markdowns, net		48,000
Sales revenue		2,175,000

b. If the results of a physical inventory indicated an inventory at retail of $295,000, what inferences would you draw?

18. **Deere and Company** reported inventory in its balance sheet as follows.

Inventories	$1,999,100,000

What additional disclosures might be necessary to present the inventory fairly?

19. Of what significance is inventory turnover to a retail store?

*20. What modifications to the conventional retail method are necessary to approximate a LIFO retail flow?

Brief Exercises

BE8.1 (LO 1) Presented below is information related to Rembrandt Inc.'s inventory.

(per unit)	Skis	Boots	Parkas
Historical cost	$190.00	$106.00	$53.00
Selling price	212.00	145.00	73.75
Cost to sell	19.00	8.00	2.50
Cost to complete	32.00	29.00	21.25

Determine the following: (a) the net realizable value for each item, and (b) the carrying value of each item under LCNRV.

BE8.2 (LO 1) Floyd Corporation has the following four items in its ending inventory.

Item	Cost	Net Realizable Value (NRV)
Jokers	$2,000	$2,100
Penguins	5,000	4,950
Riddlers	4,400	4,625
Scarecrows	3,200	3,830

Determine the following: (a) the LCNRV for each item, and (b) the amount of write-down, if any, using (1) an item-by-item LCNRV evaluation and (2) a total category LCNRV evaluation.

BE8.3 (LO 1) Stallworth Inc. uses a perpetual inventory system. At January 1, 2025, inventory was $428,000 at both cost and net realizable value. At December 31, 2025, the inventory was $572,000 at cost and $530,000 at net realizable value. Prepare the entry under (a) the cost-of-goods-sold method and (b) the loss method.

BE8.4 (LO 2) Presented below is information related to Rembrandt Inc.'s inventory, assuming Rembrandt uses lower-of-LIFO cost-or-market.

(per unit)	Skis	Boots	Parkas
Historical cost	$190.00	$106.00	$53.00
Selling price	212.00	145.00	73.75
Cost to distribute	19.00	8.00	2.50
Current replacement cost	203.00	105.00	51.00
Normal profit margin	32.00	29.00	21.25

Determine the following: (a) the two limits to market value (i.e., the ceiling and the floor) that should be used in the lower-of-cost-or-market computation for skis, (b) the cost amount that should be used in the lower-of-cost-or-market comparison of boots, and (c) the market amount that should be used to value parkas on the basis of the lower-of-cost-or-market.

BE8.5 (LO 2) Kumar Inc. uses LIFO inventory costing. At January 1, 2025, inventory was $214,000 at both cost and market value. At December 31, 2025, the inventory was $286,000 at cost and $265,000 at market value. Prepare the necessary December 31 entry under (a) the cost-of-goods-sold method and (b) the loss method.

BE8.6 (LO 3) Bell, Inc. buys 1,000 video game CDs from a distributor who is discontinuing those games. The purchase price for the lot is $8,000. Bell will group the CDs into three price categories for resale, as indicated below.

Group	No. of CDs	Price per CD
1	100	$ 5
2	800	10
3	100	15

Determine the cost per CD for each group, using the relative sales value method.

BE8.7 (LO 3) Kemper Company signed a long-term noncancelable purchase commitment with a major supplier to purchase raw materials in 2026 at a cost of $1,000,000. At December 31, 2025, the raw materials to be purchased have a market value of $950,000. Prepare any necessary December 31, 2025, entry.

BE8.8 (LO 3) Use the information for Kemper Company from BE8.7. In 2026, Kemper paid $1,000,000 to obtain the raw materials which were worth $950,000. Prepare the entry to record the purchase.

BE8.9 (LO 4) Fosbre Corporation's April 30 inventory was destroyed by fire. January 1 inventory was $150,000, and purchases for January through April totaled $500,000. Sales revenue for the same period was $700,000. Fosbre's normal gross profit percentage is 35% on sales. Using the gross profit method, estimate Fosbre's April 30 inventory that was destroyed by fire.

BE8.10 (LO 5) Boyne Inc. had beginning inventory of $12,000 at cost and $20,000 at retail. Net purchases were $120,000 at cost and $170,000 at retail. Net markups were $10,000, net markdowns were $7,000, and sales revenue was $147,000. Compute ending inventory at cost using the conventional retail method.

BE8.11 (LO 6) In a recent annual report, Gap Inc. reported beginning inventory of $1,997 million and ending inventory of $1,830 million, cost of goods sold of $9,789 million, and net sales of $15,855 million. Compute Gap's inventory turnover and the average days to sell inventory.

***BE8.12 (LO 7)** Use the information for Boyne Inc. from BE8.10. Compute ending inventory at cost using the LIFO retail method.

***BE8.13 (LO 7)** Use the information for Boyne Inc. from BE8.10, and assume the price level increased from 100 at the beginning of the year to 115 at year-end. Compute ending inventory at cost using the dollar-value LIFO retail method.

Exercises

E8.1 (LO 1) Excel (LCNRV) The inventory of Oheto Company on December 31, 2025, consists of the following items.

Part	Quantity	Cost per Unit	Net Realizable Value
110	600	$ 95	$100
111	1,000	60	52
112	500	80	76
113	200	170	180
120	400	205	208
121[a]	1,600	16	1
122	300	240	235

[a]Part No. 121 is obsolete and has a realizable value of $1 each as scrap.

Instructions

a. Determine the inventory as of December 31, 2025, by the LCNRV method, applying this method to each item.

b. Determine the inventory by the LCNRV method, applying the method to the total of the inventory.

E8.2 (LO 1) (LCNRV) Riegel Company uses the LCNRV method, on an individual-item basis, in pricing its inventory items. The inventory at December 31, 2025, consists of products D, E, F, G, H, and I. Relevant per unit data for these products appear below.

	Item					
	D	E	F	G	H	I
Estimated selling price	$120	$110	$95	$90	$110	$90
Cost	75	80	80	80	50	36
Cost to complete	30	30	25	35	30	30
Selling costs	10	18	10	20	10	20

Instructions

Using the LCNRV rule, determine the proper unit value for balance sheet reporting purposes at December 31, 2025, for each of the inventory items above.

E8.3 (LO 1) (LCNRV) Sedato Company follows the practice of pricing its inventory at LCNRV, on an individual-item basis.

Item No.	Quantity	Cost per Unit	Estimated Selling Price	Cost to Complete and Sell
1320	1,200	$3.20	$4.50	$1.60
1333	900	2.70	3.40	1.00
1426	800	4.50	5.00	1.40
1437	1,000	3.60	3.20	1.35
1510	700	2.25	3.25	1.40
1522	500	3.00	3.90	0.80
1573	3,000	1.80	2.50	1.20
1626	1,000	4.70	6.00	1.50

Instructions

From the information above, determine the amount of Sedato Company inventory.

E8.4 (LO 1) (LCNRV—Journal Entries) Dover Company began operations in 2025 and determined its ending inventory at cost and at LCNRV at December 31, 2025, and December 31, 2026. This information is presented below.

	Cost	Net Realizable Value
12/31/25	$346,000	$322,000
12/31/26	410,000	390,000

Instructions

a. Prepare the journal entries required at December 31, 2025, and December 31, 2026, assuming inventory is recorded at LCNRV and a perpetual inventory system using the cost-of-goods-sold method.

b. Prepare journal entries required at December 31, 2025, and December 31, 2026, assuming inventory is recorded at LCNRV and a perpetual system using the loss method.

c. Which of the two methods above provides the higher net income in each year?

E8.5 (LO 1) (LCNRV) Presented below is information related to Knight Enterprises.

	Jan. 31	Feb. 28	Mar. 31	Apr. 30
Inventory at cost	$15,000	$15,100	$17,000	$14,000
Inventory at LCNRV	14,500	12,600	15,600	14,500
Purchases for the month		17,000	24,000	26,500
Sales for the month		29,000	35,000	40,000

Instructions

a. From the information, prepare (as far as the data permit) monthly income statements in columnar form for February, March, and April. The inventory is to be shown in the statement at cost; the loss due to market fluctuations is to be shown separately.

b. Prepare the journal entry required at January 31 (using the loss method) and entries to adjust it monthly thereafter.

E8.6 (LO 1) (LCNRV—Error Effect) LaGreca Company uses the LCNRV method, on an individual-item basis, in pricing its inventory items. The inventory at December 31, 2025, included product X. Relevant per-unit data for product X are as follows.

Estimated selling price	$50
Cost	40
Estimated selling costs	14
Normal profit	9

There were 1,000 units of product X on hand at December 31, 2025. Product X was incorrectly valued at $38 per unit for reporting purposes. All 1,000 units were sold in 2026.

Instructions

Compute the effect of this error on net income for 2025 and the effect on net income for 2026, and indicate the direction of the misstatement for each year.

E8.7 (LO 2) (Lower-of-Cost-or-Market) Wangerin Company follows the practice of pricing its inventory at the lower-of-cost-or-market, on an individual-item basis.

Item No.	Quantity	Cost per Unit	Cost to Replace	Estimated Selling Price	Cost of Completion and Disposal	Normal Profit
1320	1,200	$3.20	$3.00	$4.50	$0.35	$1.25
1333	900	2.70	2.30	3.50	0.50	0.50
1426	800	4.50	3.70	5.00	0.40	1.00
1437	1,000	3.60	3.10	3.20	0.25	0.90
1510	700	2.25	2.00	3.25	0.80	0.60
1522	500	3.00	2.70	3.80	0.40	0.50
1573	3,000	1.80	1.60	2.50	0.75	0.50
1626	1,000	4.70	5.20	6.00	0.50	1.00

Instructions

From the information above, determine the amount of Wangerin Company inventory.

E8.8 (LO 2) (Lower-of-Cost-or-Market—Journal Entries) Corrs Company began operations in 2024 and determined its ending inventory at cost and at lower-of-LIFO cost-or-market at December 31, 2024, and December 31, 2025. This information is presented below.

	Cost	Lower-of-Cost-or-Market
12/31/24	$356,000	$327,000
12/31/25	420,000	395,000

Instructions

a. Prepare the journal entries required at December 31, 2024, and December 31, 2025, assuming that the inventory is recorded at market, and a perpetual inventory system (cost-of-goods-sold method) is used.

b. Prepare journal entries required at December 31, 2024, and December 31, 2025, assuming that the inventory is recorded at market under a perpetual system (loss method is used).

c. Which of the two methods above provides the higher net income in each year?

E8.9 (LO 3) Excel (Relative Sales Value Method) Phil Collins Realty Corporation purchased a tract of unimproved land for $55,000. This land was improved and subdivided into building lots at an additional cost of $34,460. These building lots were all of the same size but owing to differences in location were offered for sale at different prices as follows.

Group	No. of Lots	Price per Lot
1	9	$3,000
2	15	4,000
3	17	2,400

Operating expenses for the year allocated to this project total $18,200. Lots unsold at the year-end were as follows.

Group 1	5 lots
Group 2	7 lots
Group 3	2 lots

Instructions

At the end of the fiscal year Phil Collins Realty Corporation instructs you to arrive at the net income realized on this operation to date.

E8.10 (LO 3) (Relative Sales Value Method) During 2025, Pretenders Furniture Company purchases a carload of wicker chairs. The manufacturer sells the chairs to Pretenders for a lump sum of $59,850 because it is discontinuing manufacturing operations and wishes to dispose of its entire stock. Three types of chairs are included in the carload. The three types and the estimated selling price for each are listed below.

Type	No. of Chairs	Estimated Selling Price Each
Lounge chairs	400	$90
Armchairs	300	80
Straight chairs	700	50

During 2025, Pretenders sells 200 lounge chairs, 100 armchairs, and 120 straight chairs.

Instructions

a. What is the amount of gross profit realized during 2025?

b. What is the amount of inventory of unsold straight chairs on December 31, 2025?

E8.11 (LO 3) (Purchase Commitments) Marvin Gaye Company has been having difficulty obtaining key raw materials for its manufacturing process. The company therefore signed a long-term noncancelable purchase commitment with its largest supplier of this raw material on November 30, 2025, at an agreed price of $400,000. At December 31, 2025, the raw material had declined in price to $365,000.

Instructions

What entry would you make on December 31, 2025, to recognize these facts?

E8.12 (LO 3) (Purchase Commitments) At December 31, 2025, Indigo Girls Company has outstanding noncancelable purchase commitments for 36,000 gallons, at $3.00 per gallon, of raw material to be used in its manufacturing process. The company prices its raw material inventory at cost or market, whichever is lower, and uses a perpetual inventory system.

Instructions

a. Assuming that the market price as of December 31, 2025, is $3.30, how would this matter be treated in the accounts and statements? Explain.

b. Assuming that the market price as of December 31, 2025, is $2.70, instead of $3.30, how would you treat this situation in the accounts and statements?

c. Give the entry in January 2026, when the 36,000-gallon shipment is received, assuming that the situation given in (b) above existed at December 31, 2025, and that the market price in January 2026 was $2.70 per gallon. Give an explanation of your treatment.

E8.13 (LO 4) (Gross Profit Method) Each of the following gross profit percentages is expressed in terms of cost.

1. 20%.
2. 25%.
3. 33⅓%.
4. 50%.

Instructions

Indicate the gross profit percentage in terms of sales for each of the above.

E8.14 (LO 4) (Gross Profit Method) Mark Price Company uses the gross profit method to estimate inventory for monthly reporting purposes. Presented below is information for the month of May.

Inventory, May 1	$ 160,000
Purchases (gross)	640,000
Freight-in	30,000
Sales revenue	1,000,000
Sales returns	70,000
Purchase discounts	12,000

Instructions

a. Compute the estimated inventory at May 31, assuming that the gross profit is 30% of sales.

b. Compute the estimated inventory at May 31, assuming that the gross profit is 30⅓% of cost.

E8.15 (LO 4) (Gross Profit Method) Tim Legler requires an estimate of the cost of goods lost by fire on March 9. Merchandise on hand on January 1 was $38,000. Purchases since January 1 were $72,000; freight-in, $3,400; purchase returns and allowances, $2,400. Sales are made at 33⅓% above cost and

totaled $100,000 to March 9. Goods costing $10,900 were left undamaged by the fire; remaining goods were destroyed.

Instructions

a. Compute the cost of goods destroyed.

b. Compute the cost of goods destroyed, assuming that the gross profit is 33⅓% of sales.

E8.16 (LO 4) (Gross Profit Method) Wallace Company lost most of its inventory in a fire in December just before the year-end physical inventory was taken. The corporation's books disclosed the following.

Beginning inventory	$170,000	Sales revenue	$650,000
Purchases for the year	390,000	Sales returns	24,000
Purchase returns	30,000	Rate of gross profit on net sales	40%

Merchandise with a selling price of $21,000 remained undamaged after the fire. Damaged merchandise with an original selling price of $15,000 had a net realizable value of $5,300.

Instructions

Compute the amount of the loss as a result of the fire, assuming that the corporation had no insurance coverage.

E8.17 (LO 4) (Gross Profit Method) You are called by Tim Duncan of Spurs Co. on July 16 and asked to prepare a claim for insurance as a result of a theft that took place the night before. You suggest that an inventory be taken immediately. The following data are available.

Inventory, July 1	$ 38,000
Purchases—goods placed in stock July 1–15	85,000
Sales revenue—goods delivered to customers (gross)	116,000
Sales returns—goods returned to stock	4,000

Your client reports that the goods on hand on July 16 cost $30,500, but you determine that this figure includes goods of $6,000 received on a consignment basis. Your past records show that sales are made at approximately 40% over cost. Duncan's insurance covers only goods owned.

Instructions

Compute the claim against the insurance company. (Carry computation of gross profit rate to five decimal places.)

E8.18 (LO 4) (Gross Profit Method) Gheorghe Moresan Lumber Company handles three principal lines of merchandise with these varying rates of gross profit on cost.

Lumber	25%
Millwork	30%
Hardware and fittings	40%

On August 18, a fire destroyed the office, lumber shed, and a considerable portion of the lumber stacked in the yard. To file a report of loss for insurance purposes, the company must know what the inventories were immediately preceding the fire. No detail or perpetual inventory records of any kind were maintained. The only pertinent information you are able to obtain are the following facts from the general ledger, which was kept in a fireproof vault and thus escaped destruction.

	Lumber	Millwork	Hardware
Inventory, Jan. 1, 2025	$ 250,000	$ 90,000	$ 45,000
Purchases to Aug. 18, 2025	1,500,000	375,000	160,000
Sales revenue to Aug. 18, 2025	2,080,000	533,000	210,000

Instructions

Submit your estimate of the inventory amounts immediately preceding the fire.

E8.19 (LO 4) (Gross Profit Method) Presented below is information related to Aaron Rodgers Corporation for the current year.

Beginning inventory	$ 600,000	
Purchases	1,500,000	
Total goods available for sale		$2,100,000
Sales revenue		2,500,000

Instructions

Compute the ending inventory, assuming that **(a)** gross profit is 45% of sales, **(b)** gross profit is 60% of cost, **(c)** gross profit is 35% of sales, and **(d)** gross profit is 25% of cost.

E8.20 (LO 5) (Retail Inventory Method) Presented below is information related to Bobby Engram Company.

	Cost	Retail
Beginning inventory	$ 58,000	$100,000
Purchases (net)	122,000	200,000
Net markups		10,345
Net markdowns		26,135
Sales revenue		186,000

Instructions

a. Compute the ending inventory at retail.

b. Compute a cost-to-retail percentage (round to two decimals) under the following conditions.

1. Excluding both markups and markdowns.

2. Excluding markups but including markdowns.

3. Excluding markdowns but including markups.

4. Including both markdowns and markups.

c. Which of the methods in (b) above (1, 2, 3, or 4) does the following?

1. Provides the most conservative estimate of ending inventory.

2. Provides an approximation of lower-of-cost-or-market.

3. Is used in the conventional retail method.

d. Compute ending inventory at lower-of-cost-or-market (round to nearest dollar).

e. Compute cost of goods sold based on (d).

f. Compute gross profit based on (d).

E8.21 (LO 5) (Retail Inventory Method) Presented below is information related to Ricky Henderson Company.

	Cost	Retail
Beginning inventory	$ 200,000	$ 280,000
Purchases	1,375,000	2,140,000
Markups		95,000
Markup cancellations		15,000
Markdowns		35,000
Markdown cancellations		5,000
Sales revenue		2,200,000

Instructions

Compute the inventory by the conventional retail inventory method.

E8.22 (LO 5) (Retail Inventory Method) The records of Ellen's Boutique report the following data for the month of April.

Sales revenue	$99,000	Purchases (at cost)	$48,000
Sales returns	2,000	Purchases (at sales price)	88,000
Markups	10,000	Purchase returns (at cost)	2,000
Markup cancellations	1,500	Purchase returns (at sales price)	3,000
Markdowns	9,300	Beginning inventory (at cost)	30,000
Markdown cancellations	2,800	Beginning inventory (at sales price)	46,500
Freight on purchases	2,400		

Instructions

Compute the ending inventory by the conventional retail inventory method.

E8.23 (LO 6) (Analysis of Inventories) The financial statements of **ConAgra Foods, Inc.**'s recent annual report disclose the following information.

(in millions)	Current Year	Prior Year
Year-end inventories	$ 934.2	$1,044.1
Net sales	7,826.9	8,664.1
Cost of goods sold	5,484.8	6,234.9
Net income	648.0	(665.9)

Instructions

Compute ConAgra's **(a)** inventory turnover (inventory at the beginning of the prior year was $1,642.6) and **(b)** the average days to sell inventory for the current and prior years.

***E8.24 (LO 7) (Retail Inventory Method—Conventional and LIFO)** Keller Company began operations on January 1, 2024, adopting the conventional retail inventory system. None of the company's merchandise was marked down in 2024 and, because there was no beginning inventory, its ending inventory for 2024 of $38,100 would have been the same under either the conventional retail system or the LIFO retail system.

On December 31, 2025, the store management considers adopting the LIFO retail system and desires to know how the December 31, 2025, inventory would appear under both systems. All pertinent data regarding purchases, sales, markups, and markdowns are shown below. There has been no change in the price level.

	Cost	Retail
Inventory, Jan. 1, 2025	$ 38,100	$ 60,000
Markdowns (net)		13,000
Markups (net)		22,000
Purchases (net)	130,900	178,000
Sales (net)		167,000

Instructions

Determine the cost of the 2025 ending inventory under both **(a)** the conventional retail method and **(b)** the LIFO retail method.

***E8.25 (LO 7) (Retail Inventory Method—Conventional and LIFO)** Leonard Company began operations late in 2024 and adopted the conventional retail inventory method. Because there was no beginning inventory for 2024 and no markdowns during 2024, the ending inventory for 2024 was $14,000 under both the conventional retail method and the LIFO retail method. At the end of 2025, management wants to compare the results of applying the conventional and LIFO retail methods. There was no change in the price level during 2025. The following data are available for computations.

	Cost	Retail
Inventory, January 1, 2025	$14,000	$20,000
Sales revenue		80,000
Net markups		9,000
Net markdowns		1,600
Purchases	58,800	81,000
Freight-in	7,500	
Estimated theft		2,000

Instructions

Compute the cost of the 2025 ending inventory under both **(a)** the conventional retail method and **(b)** the LIFO retail method.

***E8.26 (LO 7) (Dollar-Value LIFO Retail)** You assemble the following information for Seneca Department Store, which computes its inventory under the dollar-value LIFO method.

	Cost	Retail
Inventory on January 1, 2025	$216,000	$300,000
Purchases	364,800	480,000
Increase in price level for year		9%

Instructions

Compute the cost of the inventory on December 31, 2025, assuming that the inventory at retail is **(a)** $294,300 and **(b)** $365,150.

***E8.27 (LO 7) (Dollar-Value LIFO Retail)** Presented below is information related to Langston Hughes Corporation.

	Price Index	LIFO Cost	Retail
Inventory on December 31, 2025, when dollar-value LIFO is adopted	100	$36,000	$ 74,500
Inventory, December 31, 2026	110	?	100,100

Instructions

Compute the ending inventory under the dollar-value LIFO method at December 31, 2026. The cost-to-retail ratio for 2026 was 60%.

*E8.28 (LO 7) **(Conventional Retail and Dollar-Value LIFO Retail)** Amiras Corporation began operations on January 1, 2025, with a beginning inventory of $30,100 at cost and $50,000 at retail. The following information relates to 2025.

	Retail
Net purchases ($108,500 at cost)	$150,000
Net markups	10,000
Net markdowns	5,000
Sales revenue	126,900

Instructions

a. Assume Amiras decided to adopt the conventional retail method. Compute the ending inventory to be reported in the balance sheet.

b. Assume instead that Amiras decides to adopt the dollar-value LIFO retail method. The appropriate price indexes are 100 at January 1 and 110 at December 31. Compute the ending inventory to be reported in the balance sheet.

c. On the basis of the information in part (b), compute cost of goods sold.

*E8.29 (LO 7) **(Dollar-Value LIFO Retail)** Connie Chung Corporation adopted the dollar-value LIFO retail inventory method on January 1, 2024. At that time the inventory had a cost of $54,000 and a retail price of $100,000. The following information is available.

	Year-End Inventory at Retail	Current Year Cost—Retail %	Year-End Price Index
2024	$118,720	57%	106
2025	138,750	60%	111
2026	125,350	61%	115
2027	162,500	58%	125

The price index at January 1, 2024, is 100.

Instructions

Compute the ending inventory at December 31 of the years 2024–2027. (Round to the nearest dollar.)

*E8.30 (LO 7) **(Change to LIFO Retail)** John Olerud Ltd., a local retailing concern in the Bronx, New York, has decided to change from the conventional retail inventory method to the LIFO retail method starting on January 1, 2026. The company recomputed its ending inventory for 2025 in accordance with the procedures necessary to switch to LIFO retail. The inventory computed was $212,600.

Instructions

Assuming that John Olerud Ltd.'s ending inventory for 2025 under the conventional retail inventory method was $205,000, prepare the appropriate journal entry on January 1, 2026.

Problems

P8.1 (LO 1) **(LCNRV)** Remmers Company manufactures desks. Most of the company's desks are standard models and are sold on the basis of catalog prices. At December 31, 2025, the following finished desks (10 desks in each category) appear in the company's inventory.

Finished Desks	A	B	C	D
2025 catalog selling price	$45	$48	$90	$105
FIFO cost per inventory list 12/31/25	47	45	83	96
Estimated cost to complete and sell	5	11	26	20
2026 catalog selling price	50	54	90	120

The 2025 catalog was in effect through November 2025, and the 2026 catalog is effective as of December 1; catalog prices are net of the usual discounts.

Instructions

At what amount should each of the four desks appear in the company's December 31, 2025, inventory, assuming that the company has adopted a lower-of-FIFO-cost-or-net realizable value (LCNRV) approach for valuation of inventories on an individual-item basis?

P8.2 (LO 1) (LCNRV) Garcia Home Improvement Company installs replacement siding, windows, and louvered glass doors for single-family homes and condominium complexes. The company is in the process of preparing its annual financial statements for the fiscal year ended May 31, 2025. Jim Alcide, controller for Garcia, has gathered the following data concerning inventory.

At May 31, 2025, the balance in Garcia's Raw Materials Inventory account was $408,000. Alcide summarized the relevant inventory cost and market data at May 31, 2025, in the schedule below.

Alcide assigned Patricia Devereaux, an intern from a local college, the task of calculating the amount that should appear on Garcia's May 31, 2025, financial statements for inventory under the LCNRV rule as applied to each item in inventory. Devereaux expressed concern over departing from the historical cost principle.

	Cost	Sales Price	Net Realizable Value
Aluminum siding	$ 70,000	$ 64,000	$ 56,000
Cedar shake siding	86,000	94,000	84,800
Louvered glass doors	112,000	186,400	168,300
Thermal windows	140,000	154,800	140,000
Total	$408,000	$499,200	$449,100

Instructions

a. Determine the inventory write-down, if any, at May 31, 2025.

b. For the fiscal year ended May 31, 2025, prepare the entry to record the inventory write-down, if any, using the loss method.

c. Explain the rationale for the use of the LCNRV rule as it applies to inventories.

P8.3 (LO 1) (LCNRV—Cost-of-Goods-Sold and Loss) Malone Company determined its ending inventory at cost and at LCNRV at December 31, 2025, December 31, 2026, and December 31, 2027, as shown below.

	Cost	NRV
12/31/25	$650,000	$650,000
12/31/26	780,000	712,000
12/31/27	905,000	830,000

Instructions

a. Prepare the journal entries required at December 31, 2026, and at December 31, 2027, assuming that a perpetual inventory system and the cost-of-goods-sold method of adjusting to LCNRV is used.

b. Prepare the journal entries required at December 31, 2026, and at December 31, 2027, assuming that a perpetual inventory is recorded at cost and reduced to LCNRV using the loss method.

P8.4 (LO 2) Excel (Lower-of-Cost-or-Market) Referring to the situation in P8.2 for Garcia Home Improvement Company, consider the following expanded data at May 31, 2025. Assume Garcia uses LIFO inventory costing.

	Cost	Replacement Cost	Sales Price	Net Realizable Value	Normal Profit
Aluminum siding	$ 70,000	$ 62,500	$ 64,000	$ 56,000	$ 5,100
Cedar shake siding	86,000	79,400	94,000	84,800	7,400
Louvered glass doors	112,000	124,000	186,400	168,300	18,500
Thermal windows	140,000	126,000	154,800	140,000	15,400
Total	$408,000	$391,900	$499,200	$449,100	$46,400

Instructions

a. **1.** Determine the write-down, if any, at May 31, 2025.

2. For the fiscal year ended May 31, 2025 prepare the entry to record the decline in inventory to market, if any.

b. Explain the rationale for the use of the lower-of-cost-or-market rule as it applies to inventories.

(CMA adapted)

P8.5 (LO 2) Writing (Lower-of-Cost-or-Market) Fiedler Co. follows the practice of valuing its inventory at the lower-of-cost-or-market. The following information is available from the company's inventory records as of December 31, 2025.

Item	Quantity	Unit Cost	Replacement Cost/Unit	Estimated Selling Price/Unit	Completion & Disposal Cost/Unit	Normal Profit Margin/Unit
A	1,100	$7.50	$8.40	$10.50	$1.50	$1.80
B	800	8.20	7.90	9.40	0.90	1.20
C	1,000	5.60	5.40	7.20	1.15	0.60
D	1,000	3.80	4.20	6.30	0.80	1.50
E	1,400	6.40	6.30	6.70	0.70	1.00

Instructions

Greg Forda is an accounting clerk in the accounting department of Fiedler Co., and he cannot understand why the market value keeps changing from replacement cost to net realizable value to something that he cannot even figure out. Greg is very confused, and he is the one who records inventory purchases and calculates ending inventory. You are the manager of the department and an accountant.

a. Calculate the lower-of-cost-or-market using the individual-item approach.

b. Show the journal entry he will need to make in order to write down the ending inventory from cost to market.

c. Write a memo to Greg explaining what designated market value is as well as how it is computed. Use your calculations to aid in your explanation.

P8.6 (LO 4) (Gross Profit Method) Eastman Company lost most of its inventory in a fire in December just before the year-end physical inventory was taken. Corporate records disclose the following.

Inventory (beginning)	$ 80,000	Sales revenue	$415,000
Purchases	290,000	Sales returns	21,000
Purchase returns	28,000	Gross profit % based on net selling price	35%

Merchandise with a selling price of $30,000 remained undamaged after the fire, and damaged merchandise has a net realizable value of $8,150. The company does not carry fire insurance on its inventory.

Instructions

Prepare a formal labeled schedule computing the fire loss incurred. (Do not use the retail inventory method.)

P8.7 (LO 4) Groupwork (Gross Profit Method) On April 15, 2026, fire damaged the office and warehouse of Stanislaw Corporation. The only accounting record saved was the general ledger, from which the balance sheet data below was prepared.

Stanislaw Corporation
March 31, 2026

	Dr.	Cr.
Cash	$ 20,000	
Accounts receivable	40,000	
Inventory, December 31, 2025	75,000	
Land	35,000	
Buildings	110,000	
Accumulated depreciation		$ 41,300
Equipment	3,600	
Accounts payable		23,700
Other accrued expenses		10,200
Common stock		100,000
Retained earnings		52,000
Sales revenue		135,000
Purchases	52,000	
Miscellaneous expense	26,600	
	$362,200	$362,200

The following data and information have been gathered.

1. The fiscal year of the corporation ends on December 31.
2. An examination of the April bank statement and canceled checks revealed that checks written during the period April 1–15 totaled $13,000: $5,700 paid to accounts payable as of March 31, $3,400 for April merchandise shipments, and $3,900 paid for other expenses. Deposits during the same

period amounted to $12,950, which consisted of receipts on account from customers with the exception of a $950 refund from a vendor for merchandise returned in April.

3. Correspondence with suppliers revealed unrecorded obligations at April 15 of $15,600 for April merchandise shipments, including $2,300 for shipments in transit (f.o.b. shipping point) on that date.
4. Customers acknowledged indebtedness of $46,000 at April 15, 2026. It was also estimated that customers owed another $8,000 that will never be acknowledged or recovered. Of the acknowledged indebtedness, $600 will probably be uncollectible.
5. The companies insuring the inventory agreed that the corporation's fire-loss claim should be based on the assumption that the overall gross profit rate for the past 2 years was in effect during the current year. The corporation's audited financial statements disclosed this information:

	Year Ended December 31	
	2025	**2024**
Net sales	$530,000	$390,000
Net purchases	280,000	235,000
Beginning inventory	50,000	66,000
Ending inventory	75,000	50,000

6. Inventory with a cost of $7,000 was salvaged and sold for $3,500. The balance of the inventory was a total loss.

Instructions

Prepare a schedule computing the amount of inventory fire loss. The supporting schedule of the computation of the gross profit should be in good form.

(AICPA adapted)

P8.8 (LO 5) Excel (Retail Inventory Method) The records for the Clothing Department of Sharapova's Discount Store are summarized below for the month of January.

Inventory, January 1: at retail $25,000; at cost $17,000

Purchases in January: at retail $137,000; at cost $82,500

Freight-in: $7,000

Purchase returns: at retail $3,000; at cost $2,300

Transfers in from suburban branch: at retail $13,000; at cost $9,200

Net markups: $8,000

Net markdowns: $4,000

Inventory losses due to normal breakage, etc.: at retail $400

Sales revenue at retail: $95,000

Sales returns: $2,400

Instructions

a. Compute the inventory for this department as of January 31, at retail prices.

b. Compute the ending inventory using lower-of-average-cost-or-market.

P8.9 (LO 5) Groupwork (Retail Inventory Method) Presented below is information related to Waveland Inc.

	Cost	**Retail**
Inventory, 12/31/25	$250,000	$ 390,000
Purchases	914,500	1,460,000
Purchase returns	60,000	80,000
Purchase discounts	18,000	—
Gross sales revenue (after employee discounts)	—	1,410,000
Sales returns	—	97,500
Markups	—	120,000
Markup cancellations	—	40,000
Markdowns	—	45,000
Markdown cancellations	—	20,000
Freight-in	42,000	—
Employee discounts granted	—	8,000
Loss from breakage (normal)	—	4,500

Instructions

Assuming that Waveland Inc. uses the conventional retail inventory method, compute the cost of its ending inventory at December 31, 2026.

P8.10 (LO 5) Groupwork (Retail Inventory Method) Fuque Inc. uses the retail inventory method to estimate ending inventory for its monthly financial statements. The following data pertain to a single department for the month of October 2026.

Inventory, October 1, 2026	
At cost	$ 52,000
At retail	78,000
Purchases (exclusive of freight and returns)	
At cost	272,000
At retail	423,000
Freight-in	16,600
Purchase returns	
At cost	5,600
At retail	8,000
Markups	9,000
Markup cancellations	2,000
Markdowns (net)	3,600
Normal spoilage and breakage	10,000
Sales revenue	390,000

Instructions

a. Using the conventional retail method, prepare a schedule computing estimated lower-of-cost-or-market inventory for October 31, 2026.

b. A department store using the conventional retail inventory method estimates the cost of its ending inventory as $60,000. An accurate physical count reveals only $47,000 of inventory at lower-of-cost-or-market. List the factors that may have caused the difference between the computed inventory and the physical count.

P8.11 (LO 1, 3, 6) (Statement and Note Disclosure, LCNRV, and Purchase Commitment) MaddoxSpecialty Company, a division of Lost World Inc., manufactures three models of gear shift components for bicycles that are sold to bicycle manufacturers, retailers, and catalog outlets. Since beginning operations in 1993, Maddox has used normal absorption costing and has assumed a first-in, first-out cost flow in its perpetual inventory system. The balances of the inventory accounts at the end of Maddox's fiscal year, November 30, 2025, are shown below. The inventories are stated at cost before any year-end adjustments.

Finished goods	$647,000
Work in process	112,500
Raw materials	264,000
Factory supplies	69,000

The following information relates to Maddox's inventory and operations.

1. The finished goods inventory consists of the items analyzed below.

	Cost	NRV
Down tube shifter		
Standard model	$ 67,500	$ 67,000
Click adjustment model	94,500	89,000
Deluxe model	108,000	110,000
Total down tube shifters	270,000	266,000
Bar end shifter		
Standard model	83,000	90,050
Click adjustment model	99,000	97,550
Total bar end shifters	182,000	187,600
Head tube shifter		
Standard model	78,000	77,650
Click adjustment model	117,000	119,300
Total head tube shifters	195,000	196,950
Total finished goods	$647,000	$650,550

2. One-half of the head tube shifter finished goods inventory is held by catalog outlets on consignment.
3. Three-quarters of the bar end shifter finished goods inventory has been pledged as collateral for a bank loan.
4. One-half of the raw materials balance represents derailleurs acquired at a contracted price 20% above the current market price. The NRV of the rest of the raw materials is $127,400.
5. The total NRV of the work in process inventory is $108,700.
6. Included in the cost of factory supplies are obsolete items with an historical cost of $4,200. The market value of the remaining factory supplies is $65,900.
7. Maddox applies the LCNRV method to each of the three types of shifters in finished goods inventory. For each of the other three inventory accounts, Maddox applies the LCNRV method to the total of each inventory account.
8. Consider all amounts presented above to be material in relation to Maddox's financial statements taken as a whole.

Instructions

a. Prepare the inventory section of Maddox's balance sheet as of November 30, 2025, including any required note(s).

b. Without prejudice to your answer to (a), assume that the NRV of Maddox's inventories is less than cost. Explain how this decline would be presented in Maddox's income statement for the fiscal year ended November 30, 2025.

c. Assume that Maddox has a firm purchase commitment for the same type of derailleur included in the raw materials inventory as of November 30, 2025, and that the purchase commitment is at a contracted price 15% greater than the current market price. These derailleurs are to be delivered to Maddox after November 30, 2025. Discuss the impact, if any, that this purchase commitment would have on Maddox's financial statements prepared for the fiscal year ended November 30, 2025.

(CMA adapted)

***P8.12 (LO 7) (Conventional and Dollar-Value LIFO Retail)** As of January 1, 2025, Aristotle Inc. adopted the retail method of accounting for its merchandise inventory.

To prepare the store's financial statements at June 30, 2025, you obtain the following data.

	Cost	Selling Price
Inventory, January 1	$ 30,000	$ 43,000
Markdowns		10,500
Markups		9,200
Markdown cancellations		6,500
Markup cancellations		3,200
Purchases	104,800	155,000
Sales revenue		154,000
Purchase returns	2,800	4,000
Sales returns and allowances		8,000

Instructions

a. Prepare a schedule to compute Aristotle's June 30, 2025, inventory under the conventional retail method of accounting for inventories.

b. Without prejudice to your solution to part (a), assume that you computed the June 30, 2022, inventory to be $59,400 at retail and the ratio of cost to retail to be 70%. The general price level has increased from 100 at January 1, 2025, to 108 at June 30, 2025. Prepare a schedule to compute the June 30, 2025, inventory at the June 30 price level under the dollar-value LIFO retail method.

(AICPA adapted)

***P8.13 (LO 7) Groupwork (Retail, LIFO Retail, and Inventory Shortage)** Late in 2022, Joan Seceda and four other investors took the chain of Becker Department Stores private, and the company has just completed its third year of operations under the ownership of the investment group. Andrea Selig, controller of Becker Department Stores, is in the process of preparing the year-end financial statements. Based on the preliminary financial statements, Seceda has expressed concern over inventory shortages, and she has asked Selig to determine whether an abnormal amount of theft and breakage has occurred. The accounting records of Becker Department Stores contain the following amounts on November 30, 2025, the end of the fiscal year.

	Cost	Retail
Beginning inventory	$ 68,000	$100,000
Purchases	255,000	400,000
Net markups		50,000
Net markdowns		110,000
Sales revenue		320,000

According to the November 30, 2025, physical inventory, the actual inventory at retail is $115,000.

Instructions

a. Describe the circumstances under which the retail inventory method would be applied and the advantages of using the retail inventory method.

b. Assuming that prices have been stable, calculate the value, at cost, of Becker Department Stores' ending inventory using the last-in, first-out (LIFO) retail method. Be sure to furnish supporting calculations.

c. Estimate the amount of shortage, at retail, that has occurred at Becker Department Stores during the year ended November 30, 2025.

d. Complications in the retail method can be caused by such items as (1) freight-in costs, (2) purchase returns and allowances, (3) sales returns and allowances, and (4) employee discounts. Explain how each of these four special items is handled in the retail inventory method.

(CMA adapted)

***P8.14 (LO 7) (Change to LIFO Retail)** Diderot Stores Inc., which uses the conventional retail inventory method, wishes to change to the LIFO retail method beginning with the accounting year ending December 31, 2025.

Amounts as shown below appear on the store's books before adjustment.

	Cost	Retail
Inventory, January 1, 2025	$ 15,800	$ 24,000
Purchases in 2025	116,200	184,000
Markups in 2025		12,000
Markdowns in 2025		5,500
Sales revenue in 2025		175,000

You are to assume that all markups and markdowns apply to 2025 purchases, and that it is appropriate to treat the entire inventory as a single department.

Instructions

Compute the inventory at December 31, 2025, under the following methods.

a. The conventional retail method.

b. The last-in, first-out retail method, effecting the change in method as of January 1, 2025. Assume that the cost-to-retail percentage for 2024 was recomputed correctly in accordance with procedures necessary to change to LIFO. This ratio was 59%.

(AICPA adapted)

***P8.15 (LO 7) (Change to LIFO Retail; Dollar-Value LIFO Retail)** Davenport Department Store converted from the conventional retail method to the LIFO retail method on January 1, 2025, and is now considering converting to the dollar-value LIFO inventory method. During your examination of the financial statements for the year ended December 31, 2026, management requested that you furnish a summary showing certain computations of inventory cost for the past 3 years.

Here is the available information.

1. The inventory at January 1, 2024, had a retail value of $56,000 and cost of $29,800 based on the conventional retail method.

2. Transactions during 2024 were as follows.

	Cost	Retail
Purchases	$311,000	$554,000
Purchase returns	5,200	10,000
Purchase discounts	6,000	
Gross sales revenue (after employee discounts)		551,000
Sales returns		9,000
Employee discounts		3,000
Freight-in	17,600	
Net markups		20,000
Net markdowns		12,000

3. The retail value of the December 31, 2025, inventory was $75,600, the cost ratio for 2025 under the LIFO retail method was 61%, and the regional price index was 105% of the January 1, 2025, price level.
4. The retail value of the December 31, 2026, inventory was $62,640, the cost ratio for 2026 under the LIFO retail method was 60%, and the regional price index was 108% of the January 1, 2025, price level.

Instructions

a. Prepare a schedule showing the computation of the cost of inventory on hand at December 31, 2024, based on the conventional retail method.

b. Prepare a schedule showing the recomputation of the inventory to be reported on December 31, 2024, in accordance with procedures necessary to convert from the conventional retail method to the LIFO retail method beginning January 1, 2025. Assume that the retail value of the December 31, 2024, inventory was $60,000.

c. Without prejudice to your solution to part (b), assume that you computed the December 31, 2024, inventory (retail value $60,000) under the LIFO retail method at a cost of $33,300. Prepare a schedule showing the computations of the cost of the store's 2025 and 2026 year-end inventories under the dollar-value LIFO method.

(AICPA adapted)

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ8.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. How does P&G value its inventories? Which inventory costing method does P&G use as a basis for reporting its inventories?

b. How does P&G report its inventories in the balance sheet? In the notes to its financial statements, what three descriptions are used to classify its inventories?

c. What costs does P&G include in Inventory and Cost of Products Sold?

d. What was P&G's inventory turnover in 2020? What is its gross profit percentage? Evaluate P&G's inventory turnover and its gross profit percentage.

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ8.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What is the amount of inventory reported by Coca-Cola at December 31, 2020, and by PepsiCo at December 31, 2020? What percent of total assets is invested in inventory by each company?

b. What inventory costing methods are used by Coca-Cola and PepsiCo? How does each company value its inventories?

c. In the notes, what classifications (description) are used by Coca-Cola and PepsiCo to categorize their inventories?

d. Compute and compare the inventory turnovers and days to sell inventory for Coca-Cola and PepsiCo for 2020. Indicate why there might be a significant difference between the two companies.

Financial Statement Analysis Case: Robots, Inc.

UYJ8.3 Robots, Inc. reported the following information regarding 2024–2025 inventory.

Robots, Inc.

	2025	2024
Current assets		
Cash	$ 153,010	$ 538,489
Accounts receivable, net of allowance for doubtful accounts of $46,000 in 2025 and $160,000 in 2024	1,627,980	2,596,291
Inventories (Note 2)	1,340,494	1,734,873
Other current assets	123,388	90,592
Assets of discontinued operations	—	32,815
Total current assets	3,244,872	4,993,060

Notes to Consolidated Financial Statements

Note 1 (in part): Nature of Business and Significant Accounting Policies

Inventories—Inventories are stated at the lower-of-cost-or-market. Cost is determined by the last-in, first-out (LIFO) method.

Note 2: Inventories

Inventories consist of the following.

	2025	2024
Raw materials	$1,264,646	$2,321,178
Work in process	240,988	171,222
Finished goods and display units	129,406	711,252
Total inventories	1,635,040	3,203,652
Less: Amount classified as long-term	294,546	1,468,779
Current portion	$1,340,494	$1,734,873

Inventories are stated at the lower of cost determined by the LIFO method or market for Robots, Inc. If the FIFO method had been used for the entire consolidated group, inventories after an adjustment to the lower-of-cost-or-market would have been approximately $2,000,000 and $3,800,000 at October 31, 2025 and 2024, respectively.

Inventory has been written down to estimated net realizable value, and results of operations for 2025, 2024, and 2023 include a corresponding charge of approximately $868,000, $960,000, and $273,000, respectively, which represents the excess of LIFO cost over market.

Inventory of $294,546 and $1,468,779 at October 31, 2025 and 2024, respectively, shown on the balance sheet as a noncurrent asset represents that portion of the inventory that is not expected to be sold currently.

Reduction in inventory quantities during the years ended October 31, 2025, 2024, and 2023 resulted in liquidation of LIFO inventory quantities carried at a lower cost prevailing in prior years as compared with the cost of fiscal 2022 purchases. The effect of these reductions was to decrease the net loss by approximately $24,000, $157,000, and $90,000 at October 31, 2025, 2024, and 2023, respectively.

Instructions

a. Comment on why Robots, Inc., might disclose how its LIFO inventories would be valued under FIFO.

b. Why does the LIFO liquidation reduce operating costs?

c. Comment on whether Robots, Inc. would report more or less income if it had been on a FIFO basis for all its inventory.

Financial Statement Analysis Case: Barrick Gold Corporation

UYJ8.4 **Barrick Gold Corporation**, with headquarters in Toronto, Canada, is the world's most profitable and largest gold mining company outside South Africa. Part of the key to Barrick's success has been due to its ability to maintain cash flow while improving production and increasing its reserves of gold-containing property. In the most recent year, Barrick achieved record growth in cash flow, production, and reserves.

The company maintains an aggressive policy of developing previously identified target areas that have the possibility of a large amount of gold ore, and that have not been previously developed. Barrick limits the riskiness of this development by choosing only properties that are located in politically stable regions, and by the company's use of internally generated funds, rather than debt, to finance growth.

Barrick's inventories are as follows.

Barrick Gold Corporation

Inventories (in millions, US dollars)	
Current	
Gold in process	$133
Mine operating supplies	82
	$215
Non-current (included in Other assets)	
Ore in stockpiles	$65

Instructions

a. Why do you think that there are no finished goods inventories? Why do you think the raw material, ore in stockpiles, is considered to be a non-current asset?

b. Consider that Barrick has no finished goods inventories. What journal entries are made to record a sale?

c. Suppose that gold bullion that cost $1.8 million to produce was sold for $2.4 million. The journal entry was made to record the sale, but no entry was made to remove the gold from the gold in process inventory. How would this error affect the following?

Balance Sheet	
Inventory	?
Retained earnings	?
Accounts payable	?
Working capital	?
Current ratio	?

Income Statement	
Cost of goods sold	?
Net income	?

Accounting, Analysis, and Principles

UYJ8.5 Englehart Company sells two types of pumps. One is large and is for commercial use. The other is smaller and is used in residential swimming pools. The following inventory data is available for the month of March.

	Units	Price per Unit	Total
Residential Pumps			
Inventory at Feb. 28:	200	$ 400	$ 80,000
Purchases:			
March 10	500	$ 450	$225,000
March 20	400	$ 475	$190,000
March 30	300	$ 500	$150,000
Sales:			
March 15	500	$ 540	$270,000
March 25	400	$ 570	$228,000
Inventory at March 31:	500		
Commercial Pumps			
Inventory at Feb. 28:	600	$ 800	$480,000
Purchases:			
March 3	600	$ 900	$540,000
March 12	300	$ 950	$285,000
March 21	500	$1,000	$500,000
Sales:			
March 18	900	$1,080	$972,000
March 29	600	$1,140	$684,000
Inventory at March 31:	500		

In addition to the above information, due to a downturn in the economy that has hit Englehart's commercial customers especially hard, Englehart expects commercial pump prices from March 31 onward to be considerably different (and lower) than at the beginning of and during March. Englehart has developed the following additional information.

	Commercial Pumps	Residential Pumps
Net realizable value (per unit)	$900	$580

The normal profit margin is 16.67% of cost. Englehart uses the FIFO accounting method.

Accounting

a. Determine the dollar amount that Englehart should report on its March 31 balance sheet for inventory. Assume Englehart applies lower-of-cost-or-net realizable value at the individual product level.

b. Repeat part (a) but assume Englehart applies lower-of-cost-or-net realizable value at the major categories level. Englehart places both commercial and residential pumps into the same (and only) category.

Analysis

Which of the two approaches above (individual product level or major categories) for applying LCNRV do you think gives the financial statement reader better information?

Principles

Assume that during April, the net realizable value of commercial pumps rebounds to $1,050.

a. Briefly describe how Englehart will report in its April financial statements the inventory remaining from March 31.

b. Briefly describe the conceptual trade-offs inherent in the accounting in part (a).

Developing Your Professional Skills

Critical-Thinking Cases

CT8.1 (LO 1) (LCNRV) You have been asked by the financial vice president to develop a short presentation on the LCNRV method for inventory purposes. The financial VP needs to explain this method to the president because it appears that a portion of the company's inventory has declined in value.

Instructions

The financial vice president asks you to answer the following questions.

a. What is the purpose of the LCNRV method?

b. What is meant by "net realizable value"?

c. Do you apply the LCNRV method to each individual item, to a category, or to the total of the inventory? Explain.

d. What are the potential disadvantages of the LCNRV method?

CT8.2 (LO 1) Ethics (LCNRV) The net realizable value of Lake Corporation's inventory has declined below its cost. Allyn Conan, the controller, wants to use the loss method to write down inventory because it more clearly discloses the decline in the net realizable value and does not distort the cost of goods sold. His supervisor, financial vice president Bill Ortiz, prefers the cost-of-goods-sold method to write down inventory because it does not call attention to the decline in net realizable value.

Instructions

Answer the following questions.

a. What, if any, is the ethical issue involved?

b. Is any stakeholder harmed if Bill Ortiz's preference is used?

c. What should Allyn Conan do?

CT8.3 (LO 1) (LCNRV) Ogala Corporation purchased a significant amount of raw materials inventory for a new product that it is manufacturing. Ogala uses the LCNRV rule for these raw materials. The net realizable value of the raw materials is below the original cost.

Ogala uses the FIFO inventory method for these raw materials. In the last 2 years, each purchase has been at a lower price than the previous purchase, and the ending inventory quantity for each period has been higher than the beginning inventory quantity for that period.

Instructions

a. At which amount should Ogala's raw materials inventory be reported on the balance sheet? Why?

b. In general, why is the LCNRV rule used to report inventory?

c. What would have been the effect on ending inventory and cost of goods sold had Ogala used the average-cost inventory method instead of the FIFO inventory method for the raw materials? Why?

CT8.4 (LO 1) (LCNRV) Steele Corporation purchased a significant amount of raw materials inventory for a new product that it is manufacturing. Steele uses the lower-of-average-cost-or-net realizable value (LCNRV) rule for these raw materials. The net realizable value of the raw materials is below the original cost.

In the last 2 years, each purchase has been at a lower price than the previous purchase, and the ending inventory quantity for each period has been higher than the beginning inventory quantity for that period.

Instructions

a. **1.** At which amount should Steele's raw materials inventory be reported on the balance sheet? Why?

2. In general, why is the LCNRV rule used to report inventory?

b. What would have been the effect on ending inventory and cost of goods sold had Steele used the LIFO inventory method instead of the average-cost inventory method for the raw materials? Why?

CT8.5 (LO 5) Writing (Retail Inventory Method) Saurez Company, your client, manufactures paint. The company's president, Maria Saurez, has decided to open a retail store to sell Saurez paint as well as wallpaper and other supplies that would be purchased from other suppliers. She has asked you for information about the conventional retail method of pricing inventories at the retail store.

Instructions

Prepare a report to the president explaining the retail method of pricing inventories. Your report should include the following points.

a. Description and accounting features of the method.

b. The conditions that may distort the results under the method.

c. A comparison of the advantages of using the retail method with those of using cost methods of inventory pricing.

d. The accounting theory underlying the treatment of net markdowns and net markups under the method.

(AICPA adapted)

CT8.6 (LO 1, 2, 5) (Cost Determination, LCM, Retail Method) Olson Corporation, a retailer and wholesaler of national brand-name household lighting fixtures, purchases its inventories from various suppliers.

Instructions

a. **1.** What criteria should be used to determine which of Olson's costs are inventoriable?

2. Are Olson's administrative costs inventoriable? Defend your answer.

b. **1.** Olson uses LIFO and the lower-of-cost-or-market rule for its wholesale inventories. What are the theoretical arguments for that rule?

2. The replacement cost of the inventories is below the net realizable value less a normal profit margin, which, in turn, is below the original cost. What amount should be used to value the inventories? Why?

c. Assume instead that Olson calculates the estimated cost of its ending inventories held for sale at retail using the conventional retail inventory method. How would Olson treat the beginning inventories and net markdowns in calculating the cost ratio used to determine its ending inventories? Why?

(AICPA adapted)

CT8.7 (LO 3) Ethics (Purchase Commitments) Prophet Company signed a long-term purchase contract to buy timber from the U.S. Forest Service at $300 per thousand board feet. Under these terms, Prophet must cut and pay $6,000,000 for this timber during the next year. Currently, the market value is $250 per thousand board feet. At this rate, the market price is $5,000,000. Jerry Herman, the controller, wants to recognize the loss in value on the year-end financial statements, but the financial vice president, Billie Hands, argues that the loss is temporary and should be ignored. Herman notes that market value has remained near $250 for many months, and he sees no sign of significant change.

Instructions

a. What are the ethical issues, if any?

b. Is any particular stakeholder harmed by the financial vice president's decision?

c. What should the controller do?

FASB Codification References

[1] FASB ASC Master Glossary. [Predecessor literature: "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin No. 43* (New York: AICPA, 1953), Ch. 4, par. 8.]
[2] FASB ASC 330-10-35-1B. [Predecessor literature: "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin No. 43* (New York: AICPA, 1953), Ch. 4, par. 8.]
[3] FASB ASC 330-10-35-1C. [Predecessor literature: "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin No. 43* (New York: AICPA, 1953), Ch. 4, par. 8.]
[4] FASB ASC 905-330-35-3. [Predecessor literature: "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin No. 43* (New York: AICPA, 1953), Ch. 4.]
[5] FASB ASC 330-10-35-16 through 18. [Predecessor literature: "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin No. 43* (New York: AICPA, 1953), Ch. 4.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE8.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of inventory?

b. What is the definition of market as it relates to inventory?

c. What is the definition of net realizable value?

CE8.2 Based on increased competition for one of its key products, Tutaj Company is concerned that it will not be able to sell its products at a price that would cover its costs. Since the company is already having a bad year, the sales manager proposes writing down the inventory to the lowest level possible, so that all the bad news will be in the current year. Explain to the sales manager the rationale for lower-of-cost-or-net realizable value adjustments, according to GAAP.

CE8.3 What are the provisions for subsequent measurement of inventory in the context of a hedging transaction?

CE8.4 What is the nature of the SEC guidance concerning inventory disclosures?

Codification Research Case

Jones Co. is in a technology-intensive industry. Recently, one of its competitors introduced a new product with technology that might render obsolete some of Jones's inventory. The accounting staff wants to follow the appropriate authoritative literature in determining the accounting for this significant market event.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the primary authoritative guidance for the accounting for inventories. What is the predecessor literature?

b. List three types of goods that are classified as inventory. What characteristic will automatically exclude an item from being classified as inventory?

c. Define "market" as used in the phrase "lower-of-cost-or-market."

d. Explain when it is acceptable to state inventory above cost and which industries allow this practice.

Additional Professional Resources

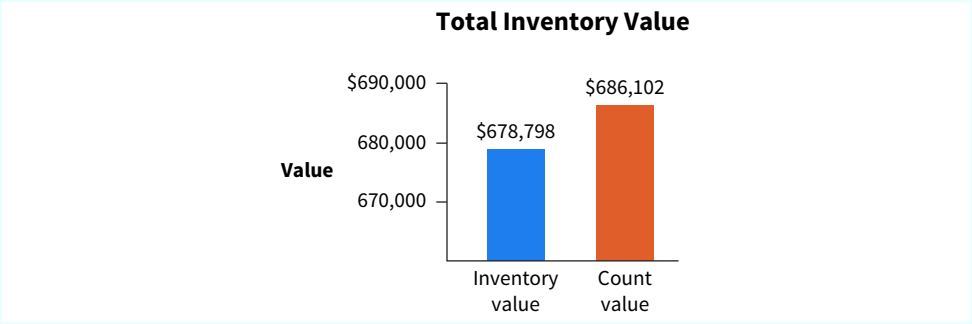
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Manage Inventory

DA8.1 Effective inventory management is critical for many companies. With thousands of individual products and millions of dollars invested, inventory is often one of the largest balance sheet items.

Data visualizations can provide quick insights into a company's inventory balance and identify potential issues before they become large-scale problems. For example, the following chart compares the value of inventory items included in the trial balance with those from a recent physical count. Management can easily identify any inventory variances and then further drill into the difference by inventory type or location.



Required

For this exercise, you will use data visualizations and other analytical tools to answer several questions about a hospital's inventory.

Go to Wiley Course Resources for complete details and instructions.

DA8.2 Beyond simply answering questions about values or variances, the visualizations used in DA8.1 can also be used to develop conclusions about a company's inventory.

Required

For this exercise, you will use inventory visualizations to develop deeper insights into a hospital's perpetual inventory system.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Account for Inventory Adjustments

DA8.3 Completing a physical inventory count is an important control over inventory. Some companies complete one annual physical count of all inventory, while others cycle through their inventory throughout the year, counting different items at different points in time. In either case, inventory balances in the general ledger are often adjusted to match the physical counts.

Required

For this exercise, you will used Excel to account for a variety of inventory adjustments related to the physical inventory count.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 8

Compare the accounting procedures related to valuation of inventories under GAAP and IFRS.

The major IFRS requirements related to accounting and reporting for inventories are found in *IAS 2* ("Inventories"), and *IAS 41* ("Agriculture"). In most cases, IFRS and GAAP are the same. The major differences are that IFRS prohibits the use of the LIFO cost flow assumption and does not have an exception to LCNRV. Following are the key similarities and differences between GAAP and IFRS related to inventories.

Similarities

- IFRS and GAAP account for inventory acquisitions at historical cost and evaluate inventory for LCNRV subsequent to acquisition.
- Who owns the goods—goods in transit, consigned goods, special sales agreements—as well as the costs to include in inventory are essentially accounted for the same under IFRS and GAAP.

Differences

- The requirements for accounting for and reporting inventories are more principles-based under IFRS. That is, GAAP provides more detailed guidelines in inventory accounting.
- A major difference between IFRS and GAAP relates to the LIFO cost flow assumption. GAAP permits the use of LIFO for inventory valuation. IFRS prohibits its use. FIFO and average-cost are the only two acceptable cost flow assumptions permitted under IFRS. Both sets of standards permit specific identification where appropriate.
- IFRS does not have an exception to the LCNRV rule for the LIFO/retail inventory methods (IFRS does not allow LIFO). GAAP, on the other hand, for LIFO/retail inventory method companies, defines market as replacement cost subject to the constraints of net realizable value (the ceiling) and net realizable value less a normal markup (the floor). IFRS does not use a ceiling or a floor to determine lower-of-cost-or-market.
- Under GAAP, if inventory is written down under the LCNRV or lower-of-cost-or-market valuation, the new basis is now considered its cost. As a result, the inventory may not be written back up to its original cost in a subsequent period. Under IFRS, the write-down may be reversed in a subsequent period up to the amount of the previous write-down. Both the write-down and any subsequent reversal should be reported on the income statement.
- IFRS requires both biological assets and agricultural produce at the point of harvest to be reported at net realizable value. GAAP does not require companies to account for all biological assets in the same way. Furthermore, these assets generally are not reported at net realizable value. Disclosure requirements also differ between the two sets of standards.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 9

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Acquisition and Disposition of Property, Plant, and Equipment

WHAT are property, plant, and equipment?

Property, plant, and equipment are assets that have physical substance, are used in the operations of a business, and are not intended for sale to customers. They are called various names—plant assets, fixed assets, or simply PP&E. By whatever name, these assets are long-lived and expected to be of service to the company for a number of years. Except for property (land), these assets decline in service potential (ability to produce revenue) over their useful lives.

WHY is accounting information about property, plant and equipment important?

Investments in property, plant, and equipment (referred to as **capital expenditures**) are often the driving force in generating company cash flows. These assets are critical to a company's success because they determine the company's capacity and therefore its ability to meet customer demand. In many cases, these are the most significant items on companies' balance sheets. For example, at **JetBlue Airways**, plant assets are 69% of its total assets. For **Walmart**, it's 56%. The table shown here reports the amounts and trends in these investments.

Capital Expenditures
(in millions)

Industry	2019	2018	Percent Change
Manufacturing	$ 272,878	$ 258,073	5.7%
Finance and insurance	195,328	181,508	7.6
Utilities	172,646	151,043	14.3
Nondurable goods industries	131,485	120,288	9.3
Transportation and warehousing	128,515	122,356	5.0
Health care and social assistance	116,735	108,552	7.5
Retail trade	98,594	89,233	10.5
Other (15 industry groups)	806,470	772,774	4.4
Total expenditures	**$1,807,827**	**$1,699,123**	**6.4%**

Source: *Annual Capital Expenditures: 2019*, Census.gov (December 16, 2020).

Investors and creditors closely monitor these amounts, as reported in the financial statements as part of total assets, depreciation expense, cash flows, and net income, as companies that overspend in this area find that income is reduced as depreciation increases. As a result, these companies often lose financial flexibility. That is, they find themselves in a cash bind as their cash flows from operations can no longer meet their obligations.

HOW do companies account for property, plant, and equipment?

At acquisition, companies record plant assets at historical cost. Cost consists of all expenditures necessary to acquire an asset and make it ready for its intended use. Once cost is established, it becomes the basis of accounting for the plant asset over its useful life. Fair value is not used to increase the recorded cost after acquisition. Determining which costs to include in property, plant, and equipment is very important. In general, costs are included if they are expected to result in greater future benefits, whereas expenditures that simply maintain a given level of service should be expensed.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 9.1 Identify property, plant, and equipment and its related costs.	**9.1 Property, Plant, and Equipment** • Acquisition of property, plant, and equipment • Cost of land • Cost of land improvements • Cost of equipment • Cost of buildings • Asset retirement costs and obligations	Examples 9.1 Land Costs 9.2 Equipment Costs—Truck 9.3 Equipment Costs—Machinery 9.4 Building Costs 9.5 ARO—Oil Tanks 9.6 ARO—Drilling Platform Put It into Practice LO 9.1 Record PP&E Costs
LO 9.2 Discuss the accounting problems associated with interest capitalization.	**9.2 Interest Costs During Construction** • Qualifying assets • Capitalization period • Amount to capitalize • Other issues	Examples 9.7 Weighted-Average Accumulated Expenditures 9.8 Interest Capitalization 9.9 Comprehensive Interest Capitalization Put It into Practice LO 9.2 Determine Interest Capitalization
LO 9.3 Explain the accounting issues related to acquiring and valuing plant assets.	**9.3 Valuation of Property, Plant, and Equipment** • Deferred-payment contracts • Lump-sum purchases • Issuance of stock • Exchanges of nonmonetary assets • Other valuation issues	Examples 9.10 Deferred Payment 9.11 Deferred Payment—Robot 9.12 Lump-Sum Purchase 9.13 Issuance of Stock 9.14 Commercial Substance 9.15 Exchange with a Loss 9.16 Exchange with a Gain 9.17 Exchange Lacks Commercial Substance, Cash Received Put It into Practice LO 9.3 Account for Valuation Scenarios
LO 9.4 Describe the accounting treatment for costs subsequent to acquisition.	**9.4 Costs Subsequent to Acquisition** • Additions • Improvements and replacements • Rearrangement and reinstallation • Repairs • Summary	Examples 9.18 Additions to Stores 9.19 Replacement—Substitution 9.20 Replacement—Capitalization 9.21 Rearrangement 9.22 Planned Maintenance Put It into Practice LO 9.4 Account for Subsequent Costs
LO 9.5 Describe the accounting treatment for the disposal of property, plant, and equipment.	**9.5 Disposition of Property, Plant, and Equipment** • Sale of plant assets • Involuntary conversion	Examples 9.23 Sale of Asset 9.24 Involuntary Conversion

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

9.1 Property, Plant, and Equipment

LEARNING OBJECTIVE 1

Identify property, plant, and equipment and its related costs.

Companies like **Boeing**, **Target**, and **Starbucks** use assets of a durable nature. These assets are called **property, plant, and equipment**. Other terms commonly used are **plant assets** and **fixed assets**. Property, plant, and equipment include land, building structures (offices, factories, warehouses), and equipment (machinery, computers, vehicles, furniture, tools). The major characteristics of property, plant, and equipment are as follows.

1. **They are acquired for use in operations and not for resale**. Only assets used to support normal business operations are classified as property, plant, and equipment. What is not property, plant, and equipment? An idle building is more appropriately classified separately as an investment. Land developers that subdivide and sell land would classify it as inventory, not as property, plant, and equipment.
2. **They are long-term in nature and usually depreciated.** Property, plant, and equipment provide services over a number of years. Companies allocate the cost of these assets to future periods through periodic depreciation charges. The exception is land, which is impaired only if a material decrease in value occurs, such as a loss in fertility of agricultural land because of poor crop rotation, drought, or soil erosion.
3. **They possess physical substance**. Property, plant, and equipment are tangible assets characterized by physical existence or substance. They can be seen, touched, and in some cases moved. This differentiates them from intangible assets, such as patents or goodwill, which may only be evidenced by legal rights or documentation.

Acquisition of Property, Plant, and Equipment

Most companies use historical cost as the basis for valuing property, plant, and equipment. **Historical cost** consists of:

1. The acquisition price plus sales tax.
2. Costs incurred bringing the asset to its location, such as freight/shipping costs.
3. Costs incurred getting the asset ready for its intended use, such as installing it or testing it prior to use (see **Global View**).

Once recorded, companies should not write up property, plant, and equipment to fair value when it is above cost. Why not? The major concern is the difficulty of developing a reliable fair value for these types of assets.

For example, how does one value **Tesla**'s Gigafactory where it manufactures battery packs for its electric vehicles or the information technology assets that **Netflix** carries on its balance sheet? Even those who favor fair value measurement for inventory and financial instruments often take the position that property, plant, and equipment should not be revalued from its historical cost.

Global View

Under international accounting standards, historical cost is the benchmark (preferred) treatment for property, plant, and equipment. However, companies may also use revalued amounts. When using revaluation, companies must revalue the class of assets regularly. *See the IFRS Insights in Chapter 10 for a discussion of the similarities and differences between IFRS and GAAP.*

Cost of Land

All expenditures made to acquire land and ready it for intended use are considered part of the land cost. When **Home Depot** purchases land on which to build a new store, its land costs typically include:

1. The purchase price.
2. Closing costs, such as title to the land, attorney's fees, commissions to real estate agents, and recording fees.

3. Costs incurred in getting the land in condition for its intended use, such as grading, filling, draining, and clearing.
4. Assumption of any liens, mortgages, or other encumbrances on the property.
5. Any additional land improvements that have an indefinite life.

Furthermore, when Home Depot purchases land for the purpose of constructing a building, it considers all costs incurred up to the excavation for the new building as land costs. **Removal of old buildings—clearing, grading, and filling—is a land cost because this activity is necessary to get the land in condition for its intended purpose.** Sometimes a company can salvage items from a demolition and sell them or sell timber that has been cleared. If Home Depot sells any salvaged items, the amount received is treated as a **reduction in the cost of the land**.

When Home Depot purchases land, it may assume certain obligations on the land such as back taxes or liens. For example, if the purchase price of the land is $50,000 cash but Home Depot assumes accrued property taxes of $5,000 and liens of $10,000, its land cost is $65,000. Home Depot also might incur **special assessments** for local improvements, such as pavements, street lights, sewers, and drainage systems. It should charge these costs to the Land account because they are relatively permanent in nature. After installation, they are maintained by the local government.

Generally, land is part of property, plant, and equipment. However, if the major purpose of acquiring and holding land is speculative, a company more appropriately classifies the land as an **investment**. If a real estate concern holds the land for resale, it should classify the land as **inventory**.

Cost of Land Improvements

Land improvements are structural additions with limited lives that are made to land. Some examples include:

- Driveways.
- Parking lots.
- Fencing.
- Lighting.
- Landscaping with a limited life, such as plants, trees, sprinkler systems, and retaining walls for planting beds.

The cost of land improvements includes all expenditures necessary to make the improvements ready for their intended use. For example, the cost of a parking lot for a new Home Depot location includes the amount paid for paving, fencing, and lighting. The company would debit the total of these costs to Land Improvements. Land improvements have limited useful lives. Even when well-maintained, they will eventually need to be replaced. As a result, companies depreciate the cost of land improvements over their useful lives.

Example 9.1
Land Costs

FACTS Assume that **Tesla** acquires property on the outskirts of Austin, Texas, for a factory site. Tesla paid $2,000,000 for the site and agreed to assume unpaid property taxes of $42,000 as well as an unpaid mortgage loan of $210,000. The city also assessed the company $38,000 for sewers, street pavement, and water mains. Tesla will be using the site as a manufacturing facility for its cybertruck. Additional costs related to the property are as follows.

Real estate commissions paid to McConaughey Realty	$120,000
Title search and title transfer fees	4,000
Costs related to demolition of an old warehouse on the land	10,000
Salvage value related to demolition of the building	1,000
Costs of surveying and grading of property	30,000
Cost of landscaping (useful life of 20 years)	101,000

QUESTION What amount should be reported for the cost of the land and any land improvements?

SOLUTION

Land costs:

Land purchase cost	$2,000,000
Assumption of unpaid property taxes	42,000
Assumption of unpaid mortgage	210,000
Assessment for sewers, pavement, and water main	38,000
Real estate commissions	120,000
Title	4,000
Demolition costs related to old warehouse	10,000
Salvage value related to old warehouse	(1,000)
Cost of surveying and grading of property	30,000
Cost of land	$2,453,000

Land improvement costs:

Cost of landscaping (limited life)	$101,000

The journal entry to record these transactions (assuming cash paid) is as follows.

Land	2,453,000	
Land Improvements	101,000	
Cash		2,554,000

Cost of Equipment

Equipment includes assets used in operations, such as store checkout counters, office furniture, factory machinery, and delivery trucks. **Delta Air Lines**' equipment includes aircraft, in-flight entertainment systems, and trucks for ground operations. The cost of equipment consists of:

- Cash purchase price plus sales taxes.
- Freight or shipping charges.
- Insurance during transit paid by the purchaser.
- Assembling, installing, and testing the equipment.

What about recurring costs related to equipment, such as vehicle licenses and accident insurance on company trucks and cars? These items are **annual recurring expenditures and do not benefit future periods**. Therefore, these expenditures are expensed when incurred. Or, they might be recorded in a prepaid asset account if they are paid in advance.

Example 9.2 Equipment Costs—Truck

FACTS Assume that **FedEx** purchases its first battery-powered delivery truck on January 1 at a cash price of $22,000. Related expenditures are sales taxes $1,320, painting and lettering $500, vehicle license $80, and a 3-year accident insurance policy $1,600.

QUESTION What journal entry would FedEx make to record the cost of the truck?

SOLUTION

The cost of the delivery truck is $23,820, computed as follows.

Cash price	$22,000
Sales taxes	1,320
Painting and lettering	500
Cost of delivery truck	**$23,820**

FedEx treats the cost of a motor vehicle license as an expense and the cost of an insurance policy as a prepaid asset.

To record the purchase of the truck and related expenditures:

Equipment—Trucks	23,820	
License Expense	80	
Prepaid Insurance	1,600	
Cash		25,500

Here is a second example of equipment costs.

Example 9.3 Equipment Costs—Machinery

FACTS Assume that **Trader Joe's** purchases a new commercial freezer at a cash price of $50,000. Related expenditures are sales taxes $3,000, insurance during shipping $500, and installation and testing $1,000.

QUESTION What journal entry would Trader Joe's make to record the cost of the freezer?

SOLUTION

The cost of the freezer is $54,500, computed as follows.

Cash price	$50,000
Sales taxes	3,000
Insurance during shipping	500
Installation and testing	1,000
Cost of factory machinery	**$54,500**

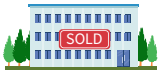
To record the purchase and related expenditures:

Equipment	54,500	
Cash		54,500

Cost of Buildings

The cost of buildings should include all expenditures related directly to their acquisition or construction. Companies may obtain use of a building by purchase, construction by an independent contractor, or by constructing the building itself. **Illustration 9.1** shows the costs related to each way of obtaining a building. Take a moment to familiarize yourself with these different types of costs.

ILLUSTRATION 9.1 Building Acquisition Costs

Purchase	Construction by Independent Contractor	Self-Construction
		
• Purchase price • Closing costs, such as attorney fees, title insurance, real estate agent fees • Assumption of any unpaid taxes or mortgages on the property • Costs of remodeling or repairs to ready the building for its intended use	• Contract price • Architect fees and building permits • Excavation costs • Third-party costs directly attributable to the construction, such as advisory or valuation costs • Interest on construction financing during the construction period (discussed in detail later in the chapter)	• Materials, labor, and overhead directly related to construction • Pro rata portion of fixed overhead • Interest on construction financing during the construction period (discussed in detail later in the chapter)

Notice that salaries and wages of employees are not included in the cost of purchasing a building or constructing one with an independent contractor. Salaries and wages of

employees are only included in the cost of a **self-constructed asset** if the employees are directly involved with the construction, such as a plant supervisor overseeing the construction.[1]

Example 9.4
Building Costs

FACTS As a civic gesture, Art-in-Bloom is hiring an independent contractor to build a museum on land it owns. The land had been used as a park for residents in the community. To obtain a building permit for the new building, Art-in-Bloom must commit to fund the purchase of land adjacent to the museum for a new park. The CFO asks you, as the accounting intern, to determine the total cost of the building that should be capitalized on Art-in-Bloom's balance sheet based on the following information.

Payment to building contractor for cost of construction	$31,000,000
Cost of additional security during construction	80,000
Allocation of overhead cost related to Art-in-Bloom management team	200,000
Excavation costs	100,000
Cost of building permit	20,000
Funding for the cost of land for a new park	150,000
Cost of hiring a project manager to oversee the work for Art-in-Bloom	180,000
Donations to offset the cost of the building	(2,000,000)
Net total costs	$29,730,000

QUESTION At what amount should the museum be reported in the financial statements at the completion of the building?

SOLUTION

The cost of the building should include all the costs mentioned above except the allocation of overhead costs related to the management team and the donations to offset the cost of the building.

- The allocation of the overhead costs is not considered a cost of the building because these costs are not avoidable and not direct costs of the building.
- The donations should not offset the cost of the building but should be reported as revenue when received.
- The payment for funding the land for the new park should be reported as part of the cost of the building because the building could not be built if the permit were not granted.

The cost of the building is therefore $31,530,000 ($29,730,000 − $200,000 + $2,000,000) comprised of cost of construction, excavation costs, security costs, cost of building permit, cost of park land, and project manager cost.

Asset Retirement Costs and Obligations

What do **Republic Services** (owner of landfills), **Noble Energy Inc.** (oil and gas producer), and **Freeport-McMoRan** (mining operations) have in common? All three of these companies have **asset retirement obligations**.

For example, when Republic Service buys a landfill, it incurs not only the cost of the landfill but also a future liability for remediation costs when the landfill is no longer useful.

- Remediation costs would include cleaning up the groundwater, removing soil contamination, and controlling methane gas migration.
- These expected remediations are referred to as **asset retirement obligations (AROs)**, and the costs are referred to as asset retirement costs (ARC).

Republic Service records a liability for an ARO equal to the fair value of the estimated costs to retire the landfill. The ARO liability is recorded in the period in which the obligation meets the definition of a liability, which in Republic's case is at the time it buys the landfill. Companies generally use an expected present value model to determine the fair value of the ARO because fair value information based on market prices is not available.

[1] A committee of the AICPA argues against allocation of overhead. Instead, it supports capitalization of only direct costs (costs directly related to the specific activities involved in the construction process). Not reporting these costs as period costs during the construction period may affect comparisons of period costs and resulting net income from one period to the next. See Accounting Standards Executive Committee, "Accounting for Certain Costs and Activities Related to Property, Plant, and Equipment," Exposure Draft (New York: AICPA, June 29, 2001).

When the liability is recorded, Republic also increases the cost of the landfill by an amount equal to the fair value of the ARO. The specific asset (in this case, the landfill) should be increased because the future economic benefit comes from the use of the landfill. Republic should not record the capitalized ARC in a separate account because there is no future economic benefit that can be associated with these costs alone. **[1]** (See the FASB Codification References near the end of the chapter.)

The cost of the landfill should then be depreciated over the life of the landfill using a rational and systemic method, such as the straight-line method. The ARO should be recorded initially at fair value and then increased to its disposal cost over the life of the landfill.

- Companies use the effective-interest method to increase the ARO over time with an offsetting entry to accretion expense.
- **Accretion expense** is a periodic expense recognized when updating the present value of a balance sheet liability.
- It is reported as an operating expense on the income statement.

Example 9.5 Asset Retirement Obligation (ARO)—Oil Tanks

FACTS Hillman Company determines that it has an ARO of $100,000 related to underground tanks for a gas station it purchased on January 1, 2025. The gas station tanks have a useful life of 10 years and are depreciated using the straight-line method. The present value of the ARO liability using a discount rate of 6% is $55,839.

QUESTION What entries should you make to record the ARO and ARC for Hillman in 2025?

SOLUTION

To record asset retirement cost for the oil tanks:

January 1, 2025

Buildings (asset retirement cost)	55,839	
Asset Retirement Obligation		55,839

To record depreciation related to the building and accretion of the asset retirement obligation up to its disposal cost:

December 31, 2025

Depreciation Expense ($55,839 ÷ 10)	5,584	
Accumulated Depreciation—Buildings		5,584
Accretion Expense ($55,839 × .06)	3,350	
Asset Retirement Obligation		3,350

Excel Solution

i	6%
n	10
FV	–$100,000
PV	$55,839.48

PV(rate, nper, pmt, [fv], [type])

As indicated in Example 9.5, Hillman records the ARO and related costs at fair value. It depreciates the ARC (as part of the building in this case) over its useful life of 10 years. In addition, the accretion, or increase, of the liability involves debiting accretion expense, an operating expense, and crediting the ARO liability. Assuming there are no changes in the estimates at the end of 10 years, the asset retirement cost will be fully depreciated and therefore has a value of $0; the ARO will have a valuation of $100,000. If the remediation or disposal costs are less than $100,000, Hillman will report a gain for the difference. If remediation costs are more than $100,000, it will report a loss.

Obligating Events

Examples of existing legal obligations that require recognition of an ARO include, but are not limited, to:

- Decommissioning of nuclear facilities.
- Dismantling, restoring, and reclaiming of oil and gas properties.
- Certain closure, reclamation, and removal costs of mining facilities.
- Closure and post-closure costs of landfills.

To capture the benefits of these long-lived assets, **the company is generally legally obligated for the costs associated with retirement of the asset, whether the company hires another party to perform the retirement activities or performs the activities**

with its own workforce and equipment. AROs give rise to various recognition patterns. For example, the obligation may arise at the outset of the asset's use (e.g., erection of an oil-rig), or it may build over time (e.g., a landfill that expands over time).

Example 9.6
Asset Retirement Obligation (ARO)—Drilling Platform

FACTS On January 1, 2025, Wildcat Oil Company erects a drilling platform in the Gulf of Mexico. Wildcat is legally required to dismantle and remove the platform at the end of its useful life, estimated to be 5 years. Wildcat estimates that dismantling and removal will cost $1,000,000. Based on a 10% discount rate, the fair value of the ARO is estimated to be $620,920. Wildcat has developed the following schedule to help in accounting for the ARO.

Year	ARO Liability at Jan. 1	Accretion Expense	ARO Liability at Dec. 31	Drilling Platform Depreciation Expense
2025	$620,920	$62,092[1]	$ 683,012[2]	$124,184[3]
2026	683,012	68,301	751,313	124,184
2027	751,313	75,131	826,444	124,184
2028	826,444	82,644	909,088	124,184
2029	909,088	90,912[4]	1,000,000	124,184

[1]$620,920 × .10; [2]$620,920 + $62,092; [3]$620,920 ÷ 5; [4]Rounded.

On January 10, 2030, Wildcat contracts with Rig Reclaimers Inc. to dismantle the platform at a contract price of $980,000.

QUESTION What entries would Wildcat make related to the ARO in 2025 and 2027, and for the disposal of the platform in 2030?

SOLUTION

To record 2025 asset retirement costs:

January 1, 2025

Drilling Platform (asset retirement cost)	620,920	
Asset Retirement Obligation		620,920

To record 2025 depreciation and accretion expense:

December 31, 2025

Depreciation Expense	124,184	
Accumulated Depreciation—Platform		124,184
Accretion Expense	62,092	
Asset Retirement Obligation		62,092

To record 2027 depreciation and accretion expense:

December 31, 2027

Depreciation Expense	124,184	
Accumulated Depreciation—Platform		124,184
Accretion Expense	75,131	
Asset Retirement Obligation		75,131

To record gain on settlement of ARO:

January 10, 2030

Asset Retirement Obligation	1,000,000	
Cash		980,000
Gain on Settlement of Asset Retirement Obligation		20,000

Asset Retirement Obligation

		01/25	620,920
		12/25	62,092
		12/26	68,301
		12/27	75,131
		12/28	82,644
		12/29	90,912
		Bal.	1,000,000
01/30	1,000,000		
			0

Illustration 9.2 summarizes the general guidelines for recognition and measurement of the ARC and ARO.

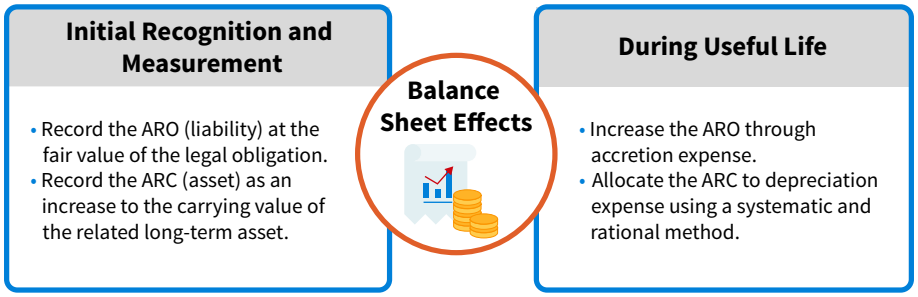

Initial Recognition and Measurement
• Record the ARO (liability) at the fair value of the legal obligation.
• Record the ARC (asset) as an increase to the carrying value of the related long-term asset.
Balance Sheet Effects
During Useful Life
• Increase the ARO through accretion expense.
• Allocate the ARC to depreciation expense using a systematic and rational method.

ILLUSTRATION 9.2 Summary of Accounting for Asset Retirement Costs

Put It into Practice LO 9.1
Record PP&E Costs

FACTS Columbia Company manufactures machine tools. On January 1, 2025, Columbia purchased a stamping machine at a retail price of $12,000. Columbia paid 6% sales tax on this purchase. Columbia paid a contractor $2,800 for a specially wired platform for the machine, to ensure uninterrupted power to the machine. Columbia estimates the machine will have a 4-year useful life, with a salvage value of $2,000 at the end of 4 years.

Columbia constructed a small manufacturing facility specifically to manufacture one particular accessory. Columbia paid the construction contractor $600,000 cash (which was the total contract price) and placed the facility into service on January 1, 2025. Because of technological changes, Columbia anticipates that the manufacturing facility will be useful for no more than 10 years. The local government, where the facility is located, requires that Columbia remediate the facility site at the end of the 10-year period so that it can be used as a community center. Columbia estimates the cost of remediation in 10 years to be $75,000.

INSTRUCTIONS

a. At what amount should Columbia record the acquisition cost of the machine?

b. Prepare the journal entries to record the manufacturing facility and the ARO. Based on an effective-interest rate of 6%, the present value of the ARO on January 1, 2025, is $41,879.

c. On December 31, 2034, Columbia pays a restoration firm to remediate the site at a price of $80,000. Prepare the journal entry for the settlement of the ARO.

SOLUTION

a. Historical cost is measured by the cash or cash equivalent price of obtaining the asset and bringing it to the location and condition for its intended use. For Columbia, this is calculated as follows.

Price	$12,000
Sales tax ($12,000 × .06)	720
Platform	2,800
Total	$15,520

b. To record the facility cost and the related ARO:

January 1, 2025		
Plant Assets (asset retirement cost)	600,000	
Cash		600,000
Plant Assets (asset retirement cost)	41,879	
Asset Retirement Obligation		41,879

c. To record the settlement of the ARO:

December 31, 2034		
Asset Retirement Obligation	75,000	
Loss on ARO Settlement	5,000	
Cash		80,000

9.2 Interest Costs During Construction

LEARNING OBJECTIVE 2

Discuss the accounting problems associated with interest capitalization.

As we have discussed, the historical cost of acquiring an asset should include all costs incurred to bring the asset to the condition and location necessary for its intended use. This concept also applies to interest costs incurred in securing financing needed during construction of a fixed asset.

It is common for a company to borrow money to construct an asset. Interest on the construction loan is considered part of the cost of the asset; without the loan, the asset could not be constructed. Plus, during construction, the asset is not generating revenues. Therefore, a company should record, or capitalize, these interest costs in the related asset account (see **Underlying Concepts**). [2] Once construction is complete, the asset is ready for its intended use such that it will begin generating revenues for the company. At this same time, the company should report any future interest as an expense.

Underlying Concepts

The objective of capitalizing interest is to obtain a measure of acquisition cost that reflects a company's total investment in the asset and to charge that cost to future periods benefited through depreciation expense.

To capitalize interest, companies consider three items:

1. Qualifying assets.
2. Capitalization period.
3. Amount to capitalize.

Qualifying Assets

To qualify for interest capitalization, assets must require a period of time to get them ready for their intended use. A company capitalizes interest costs starting with the first expenditure related to the asset. Capitalization continues until the company substantially readies the asset for its intended use.

Assets that qualify for interest cost capitalization include assets under construction for a company's own use (including buildings, manufacturing plants, and large machinery) and assets intended for sale or lease that are constructed or otherwise produced as discrete projects (e.g., ships or real estate developments). Examples of assets that do **not** qualify for interest capitalization include:

1. Assets that are in use or ready for their intended use.
2. Assets that the company does not use in its earnings activities and that are not undergoing the activities necessary to get them ready for use.

Examples of the second type include land remaining undeveloped and assets not used because of obsolescence, excess capacity, or need for repair.

Capitalization Period

The **capitalization period** is the period of time during which a company must capitalize interest. It begins with the presence of three conditions:

1. Expenditures for the asset have been made.
2. Activities that are necessary to get the asset ready for its intended use are in progress.
3. Interest cost is being incurred.

Interest capitalization **continues as long as these three conditions are present**. The capitalization period ends when the asset is substantially complete and ready for its intended use.

Amount to Capitalize

The amount of interest to capitalize is limited to the **lower** of actual interest cost incurred during the period or avoidable interest. **Avoidable interest** is the amount of interest cost that a company could theoretically avoid if it had not made expenditures for the asset. **Illustration 9.3** summarizes the decision rule for the amount of interest to capitalize–avoidable or actual interest.

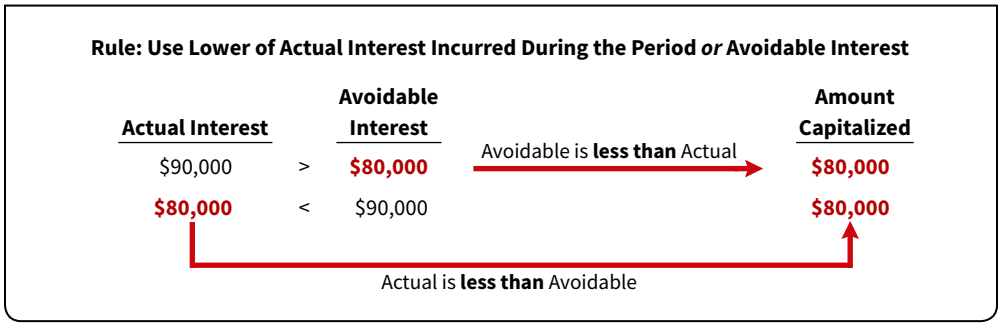


ILLUSTRATION 9.3 Decision Rule for Amount of Interest to Capitalize

As indicated in Illustration 9.3, the lower of actual or avoidable interest is capitalized. In no situation should interest cost include a cost of capital charge for stockholders' equity. Furthermore, GAAP requires interest capitalization for a qualifying asset only if its effect, compared with the effect of expensing interest, is material. [3] To apply the avoidable interest concept, a company determines the potential amount of interest that it may capitalize during an accounting period by multiplying the interest rate(s) by the **weighted-average accumulated expenditures** for qualifying assets during the period.

Weighted-Average Accumulated Expenditures

In computing the weighted-average accumulated expenditures (WAAE), a company weights the construction expenditures by the amount of time (fraction of a year or accounting period) that it can incur interest cost on the expenditure.

Example 9.7 Weighted-Average Accumulated Expenditures

FACTS Assume that **Tesla** contracts to build a tram for its Nevada Gigafactory, which is expected to be completed in 17 months. The current-year payments to the contractor are $240,000 on March 1, $480,000 on July 1, and $360,000 on November 1.

QUESTION How would you compute the weighted-average accumulated expenditures for Tesla?

SOLUTION

Tesla computes the weighted-average accumulated expenditures for the year ended December 31 as follows.

Expenditures			Capitalization		Weighted-Average
Date	Amount	×	Period*	=	Accumulated Expenditures
March 1	$ 240,000		10/12		$200,000
July 1	480,000		6/12		240,000
November 1	360,000		2/12		60,000
	$1,080,000				$500,000

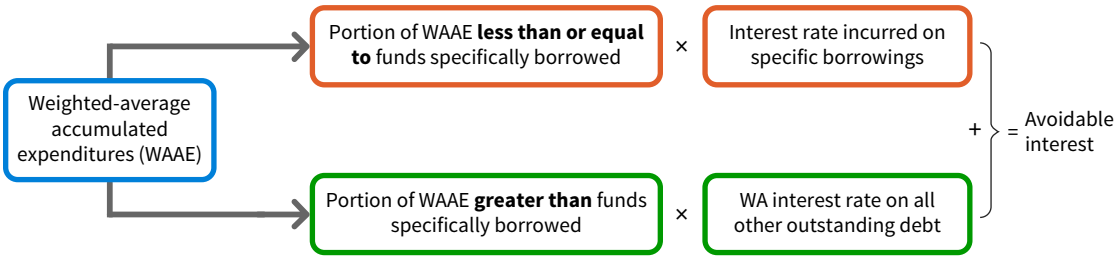
*Months between date of expenditure and date interest capitalization stops or end of year, whichever comes first (in this case, December 31).

To compute the weighted-average accumulated expenditures, Tesla weights the expenditures by the amount of time that it can incur interest cost on each one. For the March 1 expenditure, the company associates 10 months of interest cost with the expenditure. For the expenditure on July 1, it incurs only 6 months of interest costs. For the expenditure made on November 1, the company incurs only 2 months of interest cost.

Interest Rates

Once the weighted-average accumulated expenditure amount is determined, it is multiplied by an appropriate interest rate to determine avoidable interest, as shown in Illustration 9.4.[2]

ILLUSTRATION 9.4 Interest Rate for Computing


Weighted-average accumulated expenditures (WAAE)
Portion of WAAE less than or equal to funds specifically borrowed
×
Interest rate incurred on specific borrowings
Portion of WAAE greater than funds specifically borrowed
×
WA interest rate on all other outstanding debt
+
= Avoidable interest

With respect to the Tesla project in Example 9.7, if it only had a specific borrowing with an interest rate of 7% to finance the project, it would use that rate to compute avoidable interest.

Example 9.8 Using Weighted-Average Interest Rate to Determine Interest Capitalization

FACTS Refer to the facts in Example 9.7. Assume that **Tesla** did not finance the cost of the tram with a specific loan. Instead, it used a weighted-average of its debt outstanding. Here is how Tesla determined its interest rate using the following information.

	Principal	Interest
12%, 2-year note	$ 600,000	$ 72,000
9%, 10-year bonds	2,000,000	180,000
7.5%, 20-year bonds	5,000,000	375,000
	$7,600,000	$627,000

$$\text{Weighted-Average Interest Rate} = \frac{\text{Total Interest}}{\text{Total Principal}} = \frac{\$627{,}000}{\$7{,}600{,}000} = 8.25\%$$

QUESTION Given the weighted-average interest rate, what is the amount of interest cost that Tesla should capitalize for the year ended December 31, 2025?

SOLUTION

To answer this question, Tesla should first determine the amount of avoidable interest related to the project, which is computed as follows.

Weighted-Average Accumulated Expenditures	×	Interest Rate	=	Avoidable Interest
$500,000 (see Example 9.7)	×	.0825	=	$41,250

Tesla should capitalize the avoidable interest of $41,250, because it is less than the actual interest incurred of $627,000.

Other Issues

Expenditures for Land

If Tesla had purchased land with the intention of building a new building, interest costs associated with these expenditures qualify for interest capitalization. When Tesla purchases land as a site for the building, interest costs capitalized are part of the cost of the building, not the land, because the building is the reason for the interest costs.

Interest Revenue

What happens if Tesla temporarily invests the excess of the borrowed funds in interest-bearing securities until it needs the funds to pay for construction? Should Tesla offset the

[2]The interest rate to be used may rely exclusively on an average rate of all the borrowings, if desired. For our purposes, we use the specific borrowing rate followed by the average interest rate because we believe it to be more conceptually consistent. Either method can be used; GAAP does not provide explicit guidance on this measurement.

revenue against the interest cost when determining the amount of interest to capitalize as part of the construction cost of the building? GAAP requires that companies should not offset nor net interest revenue against interest cost. The reason? Temporary investment decisions are not related to the interest cost that resulted as part of the acquisition cost of the assets. Therefore, companies should capitalize the interest cost on qualifying assets whether or not they temporarily invest excess funds in short-term securities.

Example 9.9 Comprehensive Interest Capitalization

FACTS On November 1, 2024, Key Company contracted Peel Construction Co. to construct a building for $1,400,000 on land costing $100,000 (purchased from the contractor and included in the first payment). Key made the following payments to the construction company during 2025.

January 1	March 1	May 1	December 31	Total
$210,000	$300,000	$540,000	$450,000	$1,500,000

Peele Construction completed the building, ready for occupancy, on December 31, 2025. Key had the following debt outstanding at December 31, 2025.

Specific Construction Debt

1. 15%, 3-year note to finance purchase of land and construction of the building, dated December 31, 2024, with interest payable annually on December 31 — $750,000

Other Debt

2. 10%, 5-year note payable, dated December 31, 2021, with interest payable annually on December 31 — $550,000
3. 12%, 10-year bonds issued December 31, 2020, with interest payable annually on December 31 — $600,000

QUESTIONS (a) What is the amount of interest to capitalize, and (b) what entries are made to record the cost of the building in 2025?

SOLUTION

a. Key computed the weighted-average accumulated expenditures during 2025 as follows.

Expenditures			Current-Year Capitalization		Weighted-Average
Date	Amount	×	Period	=	Accumulated Expenditures
January 1	$ 210,000		12/12		$210,000
March 1	300,000		10/12		250,000
May 1	540,000		8/12		360,000
December 31	450,000		-0-		-0-
	$1,500,000				$820,000

Note that the expenditure made on December 31, the last day of the year, does not have any interest cost.

Key computes the avoidable interest as follows.

Weighted-Average Accumulated Expenditures	×	Interest Rate	=	Avoidable Interest
$750,000		.15 (construction note)		$112,500
70,000[a]		.1104 (other debt)[b]		7,728
$820,000				$120,228

[a]The amount by which the weighted-average accumulated expenditures exceeds the specific construction loan.

[b]Weighted-average interest rate computation:

	Principal	Interest
10%, 5-year note	$ 550,000	$ 55,000
12%, 5-year note	600,000	72,000
	$1,150,000	$127,000

$$\text{Weighted-Average Interest Rate} = \frac{\text{Total Interest}}{\text{Total Principal}} = \frac{\$127,000}{\$1,150,000} = 11.04\%$$

The company determines the actual interest cost, which represents the maximum amount of interest that it may capitalize during 2025, as follows.

Construction note	$750,000 × .15 =	$112,500
5-year note	550,000 × .10 =	55,000
10-year bonds	600,000 × .12 =	72,000
Actual interest		$239,500

The interest cost that Key capitalizes is the lesser of $120,228 (avoidable interest) and $239,500 (actual interest), or $120,228.

b. Key records the following journal entries during 2025.

January 1		
Land	100,000	
Buildings (or Construction in Process)	110,000	
Cash		210,000
March 1		
Buildings	300,000	
Cash		300,000
May 1		
Buildings	540,000	
Cash		540,000
December 31		
Buildings	450,000	
Cash		450,000
Buildings (Capitalized Interest)	120,228	
Interest Expense ($239,500 − $120,228)	119,272	
Cash ($112,500 + $55,000 + $72,000)		239,500

Buildings

Jan. 1	110,000	
Mar. 1	300,000	
May 1	540,000	
Dec. 31	450,000	
Interest	120,228	
	1,520,228	

In Example 9.9, the capitalized interest is part of the building account and will be depreciated over the useful life of the building. At December 31, 2025, Key discloses the amount of interest capitalized either as part of the nonoperating section of the income statement or in the notes accompanying the financial statements. We illustrate both forms of disclosure, in **Illustration 9.5** and **Illustration 9.6**.[3]

ILLUSTRATION 9.5 Capitalized Interest Reported in the Income Statement

Income from operations		$ XXXX
Other expenses and losses:		
Interest expense	$239,500	
Less: Capitalized interest	120,228	119,272
Income before income taxes		XXXX
Income taxes		XXX
Net income		$ XXXX

[3]In subsequent years of a multi-year project, Key would follow the same procedures as presented for year 1. That is, interest to be capitalized each year is determined, based on weighted-average expenditures **in that year** multiplied by the appropriate interest rate, and then compared to actual interest. Total interest for the year is then allocated to interest expense and capitalized interest.

Tesla, Inc.

Note 8: Property, Plant and Equipment, Net (In Part) We are currently constructing Gigafactory Berlin under conditional permits. Completed assets are transferred to their respective asset classes, and depreciation begins when an asset is ready for its intended use. Interest on outstanding debt is capitalized during periods of significant capital asset construction and amortized over the useful lives of the related assets. During the years ended December 31, 2020 and 2019, we capitalized $48 million and $31 million, respectively, of interest.

ILLUSTRATION 9.6 Capitalized Interest Disclosed in a Note

Put It into Practice LO 9.2
Determine Interest Capitalization

FACTS On December 31, 2024, Barton Inc. borrowed $300,000 at 12% payable annually to finance the construction of a storage building. In 2025, the company made the following expenditures related to this building.

March 1	$ 36,000
June 1	60,000
July 1	150,000
December 1	150,000

The building was completed in February 2026. Additional information is provided as follows.

1. Other debt outstanding:
   - 10-year, 13% bond, dated December 31, 2018, interest payable annually $4,000,000.
   - 6-year, 10% note, dated December 31, 2022, interest payable annually $1,600,000.
2. March 1, 2025, expenditure included land costs of $15,000.
3. Interest revenue earned in 2025, $4,900.

INSTRUCTIONS

a. Determine the amount of interest to be capitalized in 2025 in relation to the construction of the building.

b. Prepare the journal entry to record the capitalization of interest and the recognition of interest expense, if any, at December 31, 2025.

SOLUTION

a. Computation of weighted-average accumulated expenditures:

Expenditures					
Date	Amount	×	Capitalization Period	=	Weighted-Average Accumulated Expenditures
March 1	$ 36,000		10/12		$ 30,000
June 1	60,000		7/12		35,000
July 1	150,000		6/12		75,000
December 1	150,000		1/12		12,500
	$396,000				$152,500

Computation of avoidable interest:

Weighted-Average Accumulated Expenditures	×	Interest Rate	=	Avoidable Interest
$152,500	×	.12*	=	$18,300

*The 12% interest is used because the $152,200 of WAAE is less than the $300,000 borrowed.

Computation of actual interest:

$300,000 × .12	$ 36,000
$4,000,000 × .13	520,000
$1,600,000 × .10	160,000
	$716,000

Note: Use avoidable interest for capitalization purposes because it is lower than actual.

b. Buildings		18,300	
Interest Expense*		697,700	
Cash ($36,000 + $520,000 + $160,000)			716,000

*Actual interest for year	$716,000
Less: Amount capitalized	18,300
Interest expense debit	$697,700

9.3 Valuation of Property, Plant, and Equipment

LEARNING OBJECTIVE 3

Explain the accounting issues related to acquiring and valuing plant assets.

Like other assets, **companies should record property, plant, and equipment at the fair value of what they give up or at the fair value of the asset received, whichever is more clearly evident**. However, the process of asset acquisition sometimes obscures fair value. For example, if **The Walt Disney Company** buys land and buildings together for one price, how does it determine separate values for the land and buildings?

Deferred-Payment Contracts

Companies frequently purchase plant assets on long-term credit contracts, using notes, mortgages, bonds, or equipment obligations. **To record the proper cost, companies account for assets purchased on long-term credit contracts at the present value of the consideration exchanged between the contracting parties at the date of the transaction.**

Example 9.10
Deferred Payment

FACTS Assume that **Caribou Coffee** purchases a new espresso machine today in exchange for a $10,000 zero-interest-bearing note payable due 4 years from now.

QUESTION How would you record the asset, assuming the market rate of interest is 9%?

SOLUTION

Caribou would not record the asset at $10,000. Instead, the present value of the $10,000 note establishes the exchange price of the transaction or the purchase price of the asset. Given an interest rate of 9% at which to discount this single payment of $10,000 due 4 years from now, Caribou records this asset at $7,084 ($10,000 × .70843). [See Table 5.2 for the present value of a single sum, $PV = \$10{,}000\ (PVF_{4,9\%})$.]

Excel Solution

i	9%
n	4
FV	–$10,000
PV	$7,084.25

PV(rate, nper, pmt, [fv], [type])

When no interest rate is stated or if the specified rate is unreasonable, a company imputes an appropriate interest rate. The objective is to approximate the interest rate that the buyer and seller would negotiate at arm's length in a similar borrowing transaction. In imputing an interest rate, companies consider such factors as the borrower's credit rating, the amount and maturity date of the note, and prevailing interest rates. **The company uses the cash exchange price of the asset acquired (if determinable) as the basis for recording the asset and measuring the interest element.**

Example 9.11 Deferred Payment—Robot

FACTS Sutter Company purchases a specially built robot spray painter for its production line on January 2, 2025. The company issues a $100,000, 5-year, zero-interest-bearing note to Wrigley Robotics, Inc. for the new equipment. The prevailing market rate of interest for obligations of this nature is 10%. Sutter is to pay off the note in five $20,000 installments, made at the end of each year. Sutter cannot readily determine the fair value of this specially built robot.

QUESTIONS (a) What entries would you make to record the purchase of the spray painter? (b) What entries would you make on December 31, 2025, and December 31, 2026, to record payments on the installment note?

SOLUTION

a. Sutter approximates the robot's value by establishing the fair value, or present value, of the note. Since the payments are due at the end of each year, the note is an ordinary annuity. Entries for the date of purchase and dates of payments, plus computation of the present value of the note, are as follows.

January 2, 2025

Equipment	75,816*	
Discount on Notes Payable	24,184	
Notes Payable		100,000

*Present value of note = $20,000 ($PVF\text{-}OA_{5,10\%}$)
= $20,000 (3.79079); Table 5.4
= $75,816

b. Interest expense and payment on the note in the first year under the effective-interest approach are recorded as follows (see partial amortization schedule below).

December 31, 2025

Interest Expense	7,582	
Notes Payable	20,000	
Cash		20,000
Discount on Notes Payable		7,582

The entry at the end of the second year to record interest and principal payment is as follows (see partial amortization schedule below).

December 31, 2026

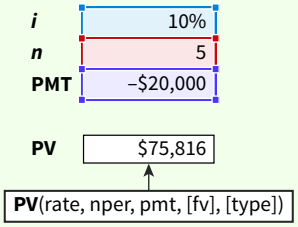
Interest Expense	6,340	
Notes Payable	20,000	
Cash		20,000
Discount on Notes Payable		6,340

The partial amortization schedule is as follows.

Year	Note Payment	10% Interest	Reduction of Principal	Balance
01/02/2025				$75,816
12/31/2025	$20,000	$7,582[a]	$12,418[b]	63,398[c]
12/31/2026	20,000	6,340	13,660	49,738

[a]$75,816 × .10; [b]$20,000 − $7,582; [c]$75,816 − $12,418

Excel Solution



In Example 9.11, if Sutter did not impute an interest rate for deferred-payment contracts, it would record the asset at an amount greater than its fair value and overstate depreciation expense. In addition, Sutter would understate interest expense in the income statement for all periods involved.

Lump-Sum Purchases

A special problem of valuing fixed assets arises when a company purchases a group of assets at a single **lump-sum price**.

- When this situation occurs, the company allocates the total cost among the various assets on the basis of their relative fair values.
- The assumption is that costs will vary in direct proportion to fair value.
- This is the same principle that companies apply to allocate a lump-sum cost among different inventory items.

To determine fair value, a company should use valuation techniques that are appropriate in the circumstances. In some cases, a single valuation technique will be appropriate. In other cases, multiple valuation approaches might have to be used.[4]

Example 9.12 Lump-Sum Purchase

FACTS Ecohomes, Inc. decides to purchase several assets of a small heating business, Green Heating, for $80,000. Green Heating is in the process of liquidation. Its assets sold are as follows.

	Book Value	Fair Value
Inventory	$30,000	$ 25,000
Land	20,000	25,000
Building	35,000	50,000
	$85,000	$100,000

QUESTIONS (a) How would you allocate the cost between the Inventory, Land, and Building? (b) What journal entry would you then make to record the purchase?

SOLUTION

a. Ecohomes allocates the $80,000 purchase price on the basis of the relative fair values (assuming specific identification of costs is impracticable) as follows.

$$\text{Inventory} \quad \frac{\$25,000}{\$100,000} \times \$80,000 = \$20,000$$

$$\text{Land} \quad \frac{\$25,000}{\$100,000} \times \$80,000 = \$20,000$$

$$\text{Building} \quad \frac{\$50,000}{\$100,000} \times \$80,000 = \$40,000$$

b. The journal entry to record the lump sum purchase is as follows, based on relative fair values.

Inventory	20,000	
Land	20,000	
Buildings	40,000	
Cash		80,000

Issuance of Stock

When companies acquire property by issuing securities, such as common stock, the par or stated value of such stock fails to properly measure the property cost. If trading of the stock

[4]The valuation approaches that should be used are the market, income, or cost approach, or a combination of these approaches. The **market approach** uses observable prices and other relevant information generated by market transactions involving comparable assets. The **income approach** uses valuation techniques to convert future amounts (for example, cash flows or earnings) to a single present value amount (discounted). The **cost approach** is based on the amount that currently would be required to replace the service capacity of an asset (often referred to as current replacement cost). In determining the fair value, the company should assume the highest and best use of the asset. [4]

is active, **the market price of the stock issued is a fair indication of the cost of the property acquired. The stock is a good measure of the current cash equivalent price.**

Example 9.13
Issuance of Stock

FACTS Upgrade Living Co. decides to purchase some adjacent land for expansion of its carpeting and cabinet operation. Instead of paying cash for the land, the company issues 5,000 shares of common stock (par value $10) to Deedland Company that have a fair value of $12 per share.

QUESTION What entry should Upgrade Living make to record this transaction?

SOLUTION

To record issuance of stock:

Land (5,000 × $12)	60,000	
Common Stock (5,000 × $10)		50,000
Paid-in Capital in Excess of Par—Common Stock		10,000

The amount credited to paid-in capital is the excess of the fair value of the stock over the par value, which in this case is $2 per share.

In Example 9.13, if Upgrade Living cannot determine the market price of the common stock exchanged, it establishes the fair value of the property. It then uses the value of the property as the basis for recording the asset and issuance of the common stock.

Exchanges of Nonmonetary Assets

Sometimes instead of paying cash for an asset or borrowing money to acquire an asset, a company may exchange one asset for another. For example, a company may exchange a piece of equipment for a piece of land. This is called an exchange of **nonmonetary assets**.

- In most cases, companies account for the exchange on the basis of **the fair value of the asset given up or the fair value of the asset received, whichever is clearly more evident**.[5] **[5]**
- Companies **should generally recognize immediately** any gains or losses on the exchange.

The rationale for immediate recognition is that most transactions have **commercial substance**, and therefore gains and losses should be recognized.

Meaning of Commercial Substance

Fair value is the basis for measuring an asset acquired in a nonmonetary exchange if the transaction has commercial substance. An exchange has **commercial substance** if the future cash flows change as a result of the transaction. That is, if the two parties' economic positions change, the transaction has commercial substance.

Example 9.14
Commercial Substance

FACTS Andrew Co. exchanges some of its equipment for land held by Roddick Inc. It is likely that the timing and amount of the cash flows arising from the land will differ significantly from the cash flows arising from the equipment.

QUESTION Does this transaction have commercial substance and, if so, how would you record this transaction?

SOLUTION

Both Andrew Co. and Roddick Inc. are in different economic positions after the exchange. Therefore, the exchange has commercial substance. The companies would record their acquired asset at fair value and recognize a gain or loss on the exchange.

[5]Nonmonetary assets are items whose price in terms of the monetary unit may change over time. Monetary assets—cash and short- or long-term accounts and notes receivable—are fixed in terms of units of currency by contract or otherwise.

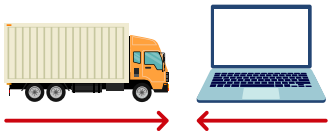
What if companies exchange similar assets, such as one truck for another truck? Even in an exchange of similar assets, a change in the economic position of the company can result. For example, let's say the useful life of the truck received is significantly longer than that of the truck given up. The cash flows for the trucks can differ significantly. As a result, the transaction has commercial substance, and the company should use fair value as a basis for measuring the asset received in the exchange.

However, it is possible to exchange similar assets but not have a significant difference in cash flows. That is, the company is in the same economic position as before the exchange. In that case, the company recognizes a loss but generally defers a gain.

- Use of fair value generally results in recognizing a gain or loss at the time of the exchange.
- Consequently, companies must determine if the transaction has commercial substance.
- To make this determination, they must carefully evaluate the cash flow characteristics of the assets exchanged.[6]

Illustration 9.7 summarizes asset exchange situations and the related accounting.

ILLUSTRATION 9.7 Accounting for Exchanges



Type of Exchange	Accounting Guidance
Exchange has commercial substance.	Recognize gains and losses immediately.
Exchange lacks commercial substance—no cash received.	Defer gains; recognize losses immediately.
Exchange lacks commercial substance—cash received.	Recognize partial gain; recognize losses immediately.*

*If cash is 25% or more of the fair value of the exchange, recognize entire gain because the earnings process is complete.

As indicated in Illustration 9.7, companies immediately recognize losses they incur on all exchanges. The accounting for gains depends on whether the exchange has commercial substance. If the exchange has commercial substance, the company recognizes the gain immediately. However, the profession modifies the rule for immediate recognition of a gain when an exchange lacks commercial substance: **If the company receives no cash in such an exchange, it defers recognition of a gain. If the company receives cash in such an exchange, it may recognize part or all of the gain immediately**.

Exchanges—Loss Situation

When a company exchanges nonmonetary assets and a loss results, the company recognizes the loss immediately. The rationale: Companies should not value assets at more than their cash equivalent price. If the loss were deferred, assets would be overstated. Therefore, companies recognize a loss immediately whether the exchange has commercial substance or not.

Example 9.15 Exchange with a Loss

FACTS Assume that **Caribou Coffee** trades its used espresso machine for a new model at Gourmet Coffee Solutions Inc. The exchange has commercial substance. The used espresso machine has a book value of $8,000 (original cost $12,000 less $4,000 accumulated depreciation) and a fair value of $6,000. The new model lists for $16,000. Gourmet Coffee Solutions gives Caribou a trade-in allowance of $9,000 if the balance is paid in cash.

QUESTIONS (a) At what amount would you record the cost of the new espresso machine? (b) What journal entry would Caribou Coffee make to record this exchange?

[6]The determination of the commercial substance of a transaction requires significant judgment. In determining whether future cash flows change, it is necessary to do one of two things: (1) determine whether the risk, timing, and amount of cash flows arising for the asset received differ from the cash flows associated with the outbound asset, or, (2) evaluate whether cash flows are affected with the exchange versus without the exchange. Also note that if companies cannot determine fair values of the assets exchanged, then they should use recorded book values in accounting for the exchange.

SOLUTION

a. The cost of the new espresso machine is $13,000, computed as follows.

List price of new machine	$16,000
Less: Trade-in allowance for used machine	9,000
Cash payment due	7,000
Fair value of used machine	6,000
Cost of new machine	$13,000

Fair value of assets given up

b. Caribou records this transaction as follows.

Equipment (new)	13,000	
Accumulated Depreciation—Equipment	4,000	
Loss on Disposal of Equipment	2,000	
Equipment (used)		12,000
Cash		7,000

We verify the loss on the disposal of the used machine as follows.

Fair value of used machine	$6,000
Less: Book value of used machine	8,000
Loss on disposal of used machine	$2,000

In Example 9.15, why did Caribou not use the trade-in allowance or the book value of the used asset as a basis for the new equipment? Because the exchange included a price concession (similar to a price discount). Few companies pay list price for equipment. Equipment dealers, such as Gourmet Coffee Solutions in Example 9.15, often inflate trade-in allowances on the used equipment so that actual selling prices fall below list prices. To record the equipment at list price would state it at an amount in excess of its cash equivalent price because of the new equipment's inflated list price. Use of book value in this situation would overstate the value of the new equipment by $2,000.[7]

Exchanges—Gain Situation

For exchanges that result in a gain, the accounting will depend on answers to the following questions.

1. Does the transaction have commercial substance?
2. Was cash **received** in the exchange?

Has Commercial Substance If a nonmonetary exchange has commercial substance, a company usually records the cost of the asset acquired at the **fair value of the asset given up** and immediately recognizes a gain. The company should use the **fair value of the asset received** only if it is more clearly evident than the fair value of the asset given up.

Example 9.16
Exchange with a Gain

FACTS Interstate Transportation Company exchanged a number of used trucks plus cash for a semi-truck. The used trucks have a combined book value of $42,000 (cost $64,000 less $22,000 accumulated depreciation). Interstate's purchasing agent, experienced in the secondhand market, indicates that the used trucks have a fair value of $49,000. In addition to the trucks, Interstate must pay $11,000 cash for the semi-truck. This exchange is considered to have commercial substance.

QUESTIONS (a) At what amount would you record the cost of the semi-truck? (b) What entry should Interstate make to record this transaction?

[7] Recognize that for Gourmet Coffee (the dealer), the asset given up in the exchange is considered inventory. As a result, Gourmet Coffee records a sale and related cost of goods sold. The used machine received by Gourmet Coffee is recorded at fair value.

SOLUTION

a. Interstate computes the cost of the semi-truck as follows.

Fair value of used trucks exchanged	$49,000
Cash paid	11,000
Cost of semi-truck	$60,000

b. After the exchange, Interstate is in a different economic position. Therefore, the transaction has commercial substance. Interstate recognizes a gain and records the exchange transaction as follows.

Trucks (semi)	60,000	
Accumulated Depreciation—Trucks	22,000	
Trucks (used)		64,000
Gain on Disposal of Trucks		7,000
Cash		11,000

The gain is the difference between the fair value of the used trucks and their book value. We verify the computation as follows.

Fair value of used trucks		$49,000
Cost of used trucks	$64,000	
Less: Accumulated depreciation	22,000	
Book value of used trucks		(42,000)
Gain on disposal of used trucks		$ 7,000

Lacks Commercial Substance—No Cash Received Now assume that the Interstate Transportation Company exchange from Example 9.16 lacks commercial substance. That is, the economic position of Interstate did not change significantly as a result of this exchange. In this case, Interstate **defers** the gain of $7,000 and reduces the basis of the semi-truck. Illustration 9.8 shows two different but acceptable computations to illustrate this reduction.

ILLUSTRATION 9.8 Basis of Semi-Truck—Fair Value vs. Book Value

Fair value of semi-truck	$60,000		Book value of used trucks	$42,000
Less: Gain deferred	7,000	**or**	Plus: Cash paid	11,000
Basis of semi-truck	$53,000		Basis of semi-truck	$53,000

Interstate records this transaction as follows.

Trucks (semi)	53,000	
Accumulated Depreciation—Trucks	22,000	
Trucks (used)		64,000
Cash		11,000

In Illustration 9.8, since the recorded value of the semi-truck is lower, depreciation expense over the life of the semi-truck will be lower. Therefore, the gain is recognized over time through lower depreciation expense or when the company later sells the semi-truck. The gain is not recognized at the time of the exchange.

Lacks Commercial Substance—Some Cash Received When a company receives cash, sometimes called "boot," in an exchange that lacks commercial substance, it must

immediately recognize a portion of the gain. The general formula for gain recognition when an exchange includes some cash is as follows.

$$\frac{\text{Cash Received (Boot)}}{\text{Cash Received (Boot) + Fair Value of Other Assets Received}} \times \text{Total Gain} = \text{Recognized Gain}$$

It's important to note that if the cash received is 25% or more of the fair value of the exchange, then both parties consider the transaction a **monetary exchange**. With monetary transactions, gains or losses are fully recognized. Our focus here is on **nonmonetary exchanges** with any cash received being less than 25% of the fair value of the exchange.

Example 9.17 Exchange Lacks Commercial Substance, Cash Received

FACTS Assume that **Publix Corporation** traded in a blue, used delivery vehicle with a book value of $60,000 (cost $110,000 less accumulated depreciation of $50,000) and a fair value of $100,000. It receives in exchange a green delivery vehicle with a fair value of $90,000 plus cash of $10,000. This exchange lacks commercial substance.

QUESTIONS (a) What is the total gain, if any, on this exchange? (b) What amount of gain, if any will be recorded on this exchange? (c) What entry would Publix make to record this exchange?

SOLUTION

a. The total gain on the transaction is as follows.

Fair value of machine given up	$100,000
Less: Book value of machine given up	60,000
Total gain	$ 40,000

b. Generally, when a transaction lacks commercial substance, a company defers any gain. But because Publix received $10,000 in cash, it recognizes a partial gain. The portion of the gain a company recognizes is the ratio of monetary assets (cash in this case) to the total consideration received. Publix computes the partial gain as follows.

$$\frac{\$10{,}000}{\$10{,}000 + \$90{,}000} \times \$40{,}000 = \$4{,}000$$

Because Publix recognizes only a gain of $4,000 on this transaction, it defers the remaining $36,000 ($40,000 − $4,000) and reduces the basis (recorded cost) of the new machine, as shown in the following summary.

Fair value of new machine	$90,000		Book value of old machine	$60,000
Less: Gain deferred	36,000	**or**	Less: Portion of book value presumed sold	6,000*
Basis of new machine	$54,000		Basis of new machine	$54,000

$$*\frac{\$10{,}000}{\$100{,}000} \times \$60{,}000 = \$6{,}000$$

c. Publix records the transaction with the following entry.

Cash	10,000	
Machinery (new)	54,000	
Accumulated Depreciation—Machinery	50,000	
Machinery (old)		110,000
Gain on Disposal of Machinery		4,000

The rationale for the treatment of a partial gain is as follows.

Before the nonmonetary exchange, a company has an unrecognized gain because the fair value of the old asset is greater than its book value.

When the exchange occurs, a portion of the fair value is converted to a more liquid asset, cash.

The ratio of this liquid asset to the total consideration received is the portion of the total gain that the company realizes.

Illustration 9.9 presents in summary form the accounting requirements for recognizing gains and losses on exchanges of nonmonetary assets.

ILLUSTRATION 9.9 Summary of Gain and Loss Recognition on Exchanges of Nonmonetary Assets

1. Compute the total gain or loss on the transaction. This amount is equal to the difference between the fair value of the asset given up and the book value of the asset given up.
2. If a loss is computed in Step 1, always recognize the entire loss.
3. If a gain is computed in Step 1,
   (a) and the exchange has commercial substance, recognize the entire gain
   (b) and the exchange lacks commercial substance.
      (1) and no cash is involved, no gain is recognized.
      (2) and some cash is given, no gain is recognized.
      (3) and some cash is received, the following portion of the gain is recognized:

$$\frac{\text{Cash Received (Boot)}}{\text{Cash Received (Boot) + Fair Value of Other Assets Received}} \times \text{Total Gain}^{8}$$

Companies disclose in their financial statements nonmonetary exchanges during a period. Such disclosure indicates the nature of the transaction(s), the method of accounting for the assets exchanged, and gains or losses recognized on the exchanges. [7]

Other Asset Valuation Issues

An exception to the historical cost principle for assets is the **prudent cost** concept. This concept states that if for some reason a company ignorantly paid too much for an asset originally, it is theoretically preferable to charge a loss immediately. For example, assume that Marlow Company believes the cost of an asset acquisition exceeds the fair value of the assets acquired. If Marlow has done its due diligence and believes it is correct in its analysis, Marlow should reallocate the excess cost over fair value on the basis of the relative fair value of the assets purchased. No loss should be recognized at the date of acquisition.

What happens, on the other hand, if Marlow makes a bargain purchase or internally constructs a piece of equipment at a cost savings? GAAP indicates that the excess of the fair value over cost should not result in an immediate gain under any circumstances. In this situation, the costs (including cost savings) for the asset or assets acquired should be allocated in relation to the fair value of the assets acquired.

Put It into Practice LO 9.3

Account for Valuation Scenarios

FACTS Warbler Corporation entered into the following transactions.

1. Warbler purchased a computer on December 31, 2024, for $105,000, paying $30,000 down and agreeing to pay the balance in five equal installments of $15,000 payable each December 31 beginning in 2025. An assumed interest rate of 10% is implicit in the purchase price.
2. Warbler has negotiated the purchase of a new piece of automatic equipment on January 1, 2025, at a price of $8,000 plus trade-in, f.o.b. factory. Warbler paid $8,000 cash and traded in used equipment. The used equipment had originally cost $62,000; it had a book value of $42,000 and a secondhand fair value of $47,800, as indicated by recent transactions involving similar equipment. Freight and installation charges for the new equipment required a cash payment of $1,100.

[8] When the monetary consideration is significant, i.e., **25% or more** of the fair value of the exchange, both parties consider the transaction a **monetary exchange**. Such "monetary" exchanges rely on the fair values to measure the gains or losses that are recognized in their entirety. [6]

INSTRUCTIONS

a. Prepare the journal entry (entries) for the computer at (1) the date of purchase; (2) at December 31, 2025, to record the payment and interest (effective-interest method employed); and (3) December 31, 2026, to record the payment and interest (effective-interest method employed).

b. Prepare the journal entry to record the new piece of automatic equipment, assuming that the exchange has commercial substance.

c. Assuming the same facts as in (b) except that fair value information for the assets exchanged is not determinable, prepare the journal entry to record this transaction.

SOLUTION

a. 1.

December 31, 2024

Equipment	86,861.85*	
Discount on Notes Payable ($105,000 − $86,861.85)	18,138.15	
Cash		30,000.00
Notes Payable ($105,000 − $30,000)		75,000.00

*PV of $15,000 ordinary annuity @ 10% for 5 years

($15,000 × 3.79079)	$56,861.85
Down payment	30,000.00
Capitalized value of equipment	$86,861.85

2.

December 31, 2025

Notes Payable	15,000.00	
Interest Expense (see below schedule)	5,686.19	
Cash		15,000.00
Discount on Notes Payable		5,686.19

Year	Note Payment	10% Interest	Reduction of Principal	Balance
12/31/24				$56,861.85
12/31/25	$15,000.00	$5,686.19[a]	$ 9,313.81[b]	47,548.04[c]
12/31/26	15,000.00	4,754.80	10,245.20	37,302.84

[a]$56,861.85 × .10; [b]$15,000.00 − $9,313.81; [c]$56,861.85 − $9,313.81

3.

December 31, 2026

Notes Payable	15,000.00	
Interest Expense (see above schedule)	4,754.80	
Cash		15,000.00
Discount on Notes Payable		4,754.80

b. Exchange has commercial substance, and no cash is received. The full gain would be recognized as follows.

January 1, 2025

Equipment	56,900*	
Accumulated Depreciation—Equipment	20,000	
Gain on Disposal of Equipment		5,800**
Equipment		62,000
Cash ($8,000 + $1,100)		9,100

*Valuation of equipment:

Cash	$ 8,000
Installation cost	1,100
Fair value of used equipment	47,800
Cost of new equipment	$56,900

**Computation of gain:

Fair value of old asset		$47,800
Cost of old asset	$62,000	
Less: Accumulated depreciation	20,000[a]	
Book value of old asset		(42,000)
Gain on disposal of equipment		$ 5,800

[a]Cost – Book Value = $62,000 − $42,000

c. Fair value information is not determinable. The transaction would be recognized as follows.

January 1, 2025

Equipment	51,100*	
Accumulated Depreciation—Equipment	20,000	
Equipment		62,000
Cash		9,100

*Basis of new equipment:

Book value of old equipment	$42,000
Cash paid (including installation costs)	9,100
Basis of new equipment	$51,100

9.4 Costs Subsequent to Acquisition

LEARNING OBJECTIVE 4

Describe the accounting treatment for costs subsequent to acquisition.

After installing plant assets and readying them for use, a company incurs additional costs over the life of the asset that range from ordinary repairs to significant additions. You experience this when you own a car. Illustration 9.10 provides examples of expenditures you make over the life of owning a car. Take a moment to study the illustration.

ILLUSTRATION 9.10 Costs over the Life of an Asset (Car)

Examples of costs	To maintain car in normal working order: • Oil change • Repair/replace tires • Replace windshield	To increase the life or operating efficiency of the car: • New transmission • New suspension system • New battery for a hybrid car
Accounting treatment of these costs	Expense when incurred.	Capitalize (debit) the asset (car) account and depreciate over the remaining useful life of the asset.
Accounting definition	**Revenue expenditures**–Maintain a given level of service and do not increase an asset's future benefits.	**Capital expenditures**–Achieve greater future benefits for the asset, such as increased useful life, enhanced quality of output, or increased quantity of output.

In general, costs incurred to achieve greater future benefits should be capitalized, whereas expenditures that simply maintain a given level of services should be expensed.

The distinction between a **capital expenditure (asset)** and a **revenue expenditure (expense)** is not always clear-cut. Most companies develop internal policies to ensure consistent **application of a capital/expense policy.** You should recognize the most companies expense some capital costs due to expediency and lack of materiality. For example, companies expense wastepaper baskets because of administrative convenience, although you could argue that theoretically these waste baskets are capital expenditures (see **Underlying Concepts**).

Underlying Concepts

Expensing long-lived wastepaper baskets is an application of the materiality concept.

- A general rule that companies often follow is whether expensing capital items will affect the financial statements either in a quantitative or qualitative way.
- If material, expensing capital costs or capitalizing expenses are violations of GAAP.

Companies generally incur four major types of expenditures related to fixed assets.

Major Types of Expenditures

Additions. Increase or extension of existing assets.

Improvements and replacements. Substitution of an improved asset for an existing one.

Rearrangement and reinstallation. Movement of assets from one location to another.

Repairs. Expenditures that maintain assets in condition for operation.

Additions

Additions should present no major accounting problems. By definition, **companies capitalize any addition to plant assets because a new asset is created**. For example, the addition of a wing to a hospital, or of an air conditioning system to an office, increases the service potential of that facility. Companies should capitalize these expenditures and record depreciation expense over the remaining useful life of the asset.

One problem that arises in this area is the accounting for any changes related to the existing structure as a result of the addition. Is the cost incurred to tear down an old wall, to make room for the addition, a cost of the addition or an expense or loss of the period? The answer is that it depends on the original intent.

- If the company had anticipated building an addition later, then this cost of removal is a proper cost of the addition.
- If the company had not anticipated this development, it should properly report the removal as a loss in the current period on the basis of inefficient planning.

Normally, the company retains the carrying amount of the old wall in the accounts, although theoretically the company should remove it.

Example 9.18
Additions to Stores

FACTS Assume that **Lululemon** has decided to expand the size of its store to provide additional sales space for its inventory. It contracts with an adjacent store to take some of its available space, but it will involve substantial remodeling costs of $200,000. As part of the remodeling costs, Lululemon will have to remove one wall and build a new wall in a different space at a cost of $35,000.

QUESTION How would you account for these costs, assuming Lululemon anticipated expanding the size of the store?

SOLUTION

Lululemon should capitalize the remodeling costs of $200,000, as well as the $35,000 related to the tearing down of the old wall, as it had anticipated expanding the size of the store.

Improvements and Replacements

Companies substitute one asset for another through **improvements** and **replacements**. What is the difference between an improvement and a replacement?

- An **improvement, or betterment,** is the substitution of a **better asset** for the one currently used (say, a concrete floor for a wooden floor).
- A **replacement** is the substitution of a **similar asset** (a wooden floor for a wooden floor).

Many times, improvements and replacements result from a general policy to modernize or rehabilitate an older building or piece of equipment. The problem is differentiating these types of expenditures from normal repairs. Does the expenditure increase the **future service potential** of the asset? Or does it merely **maintain the existing level** of service? Frequently, the answer is not clear-cut. Good judgment is required to correctly classify these expenditures.

If the expenditure increases the future service potential of the asset, a company should capitalize it. The accounting is therefore handled in one of three ways, depending on the circumstances: using the substitution approach, capitalizing the new cost, or charging to accumulated depreciation.

Using the Substitution Approach

Conceptually, the **substitution approach** is correct if the carrying amount of the old asset is available. It is then a simple matter to remove the cost of the old asset and replace it with the cost of the new asset.

Example 9.19
Replacement—Substitution

FACTS Instinct Enterprises decides to replace the pipes in its plumbing system. A plumber suggests that the company use plastic tubing in place of the cast-iron pipes and copper tubing. The old pipe and tubing have a book value of $15,000 (cost of $150,000 less accumulated depreciation of $135,000). The plastic tubing costs $125,000.

QUESTION If Instinct pays $125,000 for the new tubing after exchanging the old tubing, what entry would it make to record this replacement?

SOLUTION

To record a replacement using the substitution approach:

Plant Assets (plumbing system)	125,000	
Accumulated Depreciation—Plant Assets	135,000	
Loss on Disposal of Plant Assets ($150,000 − $135,000)	15,000	
Plant Assets (old plumbing system)		150,000
Cash		125,000

Often, determining the book value of the old asset can be problematic. The components of a given asset depreciate at different rates. However, generally no separate accounting is made. For example, the tires, motor, and body of a truck depreciate at different rates, but most companies use one rate for the entire truck. Companies can set separate depreciation rates, but it is often impractical. If a company cannot determine the carrying amount of the old asset, it adopts one of two other approaches.

Capitalizing the New Cost

Another approach capitalizes the improvement and keeps the carrying amount of the old asset on the books. The justification for this approach is that the old item is sufficiently depreciated to reduce its carrying amount almost to zero, meaning it has little to no impact on the

balance sheet. Although this assumption may not always be true, the differences are often insignificant. Companies usually handle improvements in this manner.

Example 9.20
Replacement—Capitalization

FACTS Refer to the facts in Example 9.19.

QUESTION If Instinct decides to capitalize the cost of the new asset and ignore the book value of the old asset, what entry would it make to record this replacement?

SOLUTION

To capitalize a new asset:

Plant Assets (plumbing system)	125,000	
Cash		125,000

Charging to Accumulated Depreciation

If an addition does not improve the quantity or quality of the asset itself but instead extends its useful life, the company debits the expenditure to Accumulated Depreciation rather than to an asset account. In the Instinct example (Examples 9.19 and 9.20), the entry is as follows.

Accumulated Depreciation—Plant Assets	125,000	
Cash		125,000

The theory behind this approach is that the replacement extends the useful life of the asset and thereby recaptures some or all of the past depreciation. The net carrying amount of the asset is the same whether debiting the asset or accumulated depreciation.

Rearrangement and Reinstallation

Companies incur **rearrangement and reinstallation costs** to benefit future periods. An example is the rearrangement and reinstallation of machines to facilitate future production.

- If a company like **The Coca-Cola Company** can determine or estimate the original installation cost and the accumulated depreciation to date, it handles the rearrangement and reinstallation cost using the substitution approach.
- If not, which is generally the case, Coca-Cola should capitalize the new costs as an asset to be amortized over future periods expected to benefit.
- If these costs are immaterial, if they cannot be separated from other operating expenses, or if their future benefit is questionable, the company should immediately expense them.

Example 9.21
Rearrangement

FACTS Leonard Co. has an existing factory that it intends to demolish and redevelop. During the redevelopment period, the company will move its production facilities to another temporary site. The following costs will be incurred for the project: (1) rent of $500,000 for the temporary site, (2) removal costs of $300,000 to transport the machinery from the old location to the temporary location, and (3) $1,000,000 to install the machinery in the temporary location.

QUESTION Can all of these costs be capitalized as part of the cost of the new building? Explain.

SOLUTION

No, all the of these costs cannot be capitalized as part of the cost of the new building. Even though the costs are incremental, they are not directly attributable to the new building and not necessary for it to be capable of operating in the manner intended by management. The costs related to the temporary facility should be expensed as incurred.

Repairs

A company makes **ordinary repairs** to maintain plant assets in operating condition. It charges ordinary repairs to an expense account in the period incurred, on the basis that **it is the primary period benefited**. Maintenance charges that occur regularly include replacing minor parts, lubricating and adjusting equipment, repainting, and cleaning. A company treats these as ordinary operating expenses.

It is often difficult to distinguish a repair from an improvement or replacement.

- The major consideration is whether the expenditure benefits more than one year or one operating cycle, whichever is longer.
- If a **major repair** (such as an overhaul) occurs, several periods will benefit.

A company should handle the cost of a major repair as an addition, improvement, or replacement.[9]

Example 9.22 Planned Maintenance

FACTS Assume that **Southwest Airlines** schedules major overhauls of its planes every 3 years.

QUESTION How should Southwest account for these overhaul costs?

SOLUTION

Once Southwest incurs the overhaul costs, it would record them as an asset and then depreciate them over a 3-year period (until the next overhaul).

Some argue that an accrue-in-advance approach better matches expenses to revenues and reports a company's obligation for these costs. However, reporting a liability is inappropriate. For example, in Example 9.22, to whom does **Southwest Airlines** owe? In other words, Southwest has no obligation to an outside party until it has to pay for the overhaul costs, and therefore it has no liability. As a result, companies are not permitted to accrue in advance for planned major overhaul costs either for interim or annual periods. [8]

Summary of Costs Subsequent to Acquisition

Illustration 9.11 summarizes the accounting treatment for various costs incurred subsequent to the acquisition of capitalized assets.

ILLUSTRATION 9.11 Summary of Costs Subsequent to Acquisition of Property, Plant, and Equipment

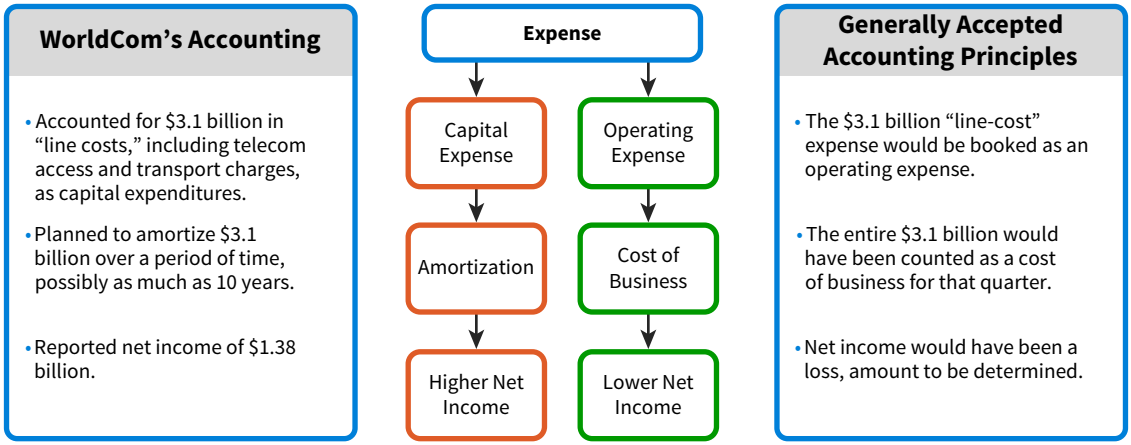
Type of Expenditure	Normal Accounting Treatment
Additions, Improvements, and replacements	Capitalize cost of addition to asset account. (a) **Carrying value known:** Remove cost of and accumulated depreciation on old asset, recognizing any gain or loss. Capitalize the cost of improvement/replacement. (b) **Carrying value unknown:** 1. If the asset's useful life is extended, debit accumulated depreciation for cost of improvement/replacement. 2. If the quantity or quality of the asset's productivity is increased, capitalize cost of improvement/replacement to asset account.
Rearrangement and reinstallation	(a) If original installation cost is **known**, account for cost of rearrangement/reinstallation as a replacement (carrying value known). (b) If original installation cost is **unknown** and rearrangement/reinstallation cost is **material** in amount and benefits future periods, capitalize as an asset. (c) If original installation cost is **unknown** and rearrangement/reinstallation cost is **not material or future benefit is questionable**, expense the cost when incurred.
Repairs	(a) **Ordinary:** Expense cost of repairs when incurred. (b) **Major:** As appropriate, treat as an addition, improvement, or replacement.

[9] A committee of the AICPA has proposed (see footnote 1) that companies expense as incurred costs involved for planned major expenditures unless they represent an **additional** component or the **replacement** of an existing component.

Accounting Matters — Is that an Asset or an Expense?

No example better illustrates the importance of correctly categorizing expenditures as capital assets or operating expenses than a fraud perpetuated by **WorldCom Inc**. As one of the world's largest telecommunications companies, one of WorldCom's largest expenditures related to amounts paid to local telephone networks to complete long-distance calls. Instead of recording these charges as operating expenses, WorldCom recorded a significant portion as capital expenditures, to the tune of $3.1 billion dollars!

This maneuver was worth hundreds of millions of dollars to WorldCom's bottom line. It effectively turned a loss for all of one year and the first quarter of the next year into a profit. The following graphic compares WorldCom's accounting to that under GAAP.


WorldCom's Accounting
• Accounted for $3.1 billion in "line costs," including telecom access and transport charges, as capital expenditures.
• Planned to amortize $3.1 billion over a period of time, possibly as much as 10 years.
• Reported net income of $1.38 billion.
Expense
Capital Expense
Amortization
Higher Net Income
Operating Expense
Cost of Business
Lower Net Income
Generally Accepted Accounting Principles
• The $3.1 billion "line-cost" expense would be booked as an operating expense.
• The entire $3.1 billion would have been counted as a cost of business for that quarter.
• Net income would have been a loss, amount to be determined.

Getting the accounting right matters. Soon after this discovery, WorldCom filed for bankruptcy.

Put It into Practice LO 9.4

Account for Subsequent Costs

FACTS The following transactions occurred during 2025. Assume that depreciation of 10% per year is charged on all machinery and 5% per year on buildings, on a straight-line basis, with no estimated salvage value. Depreciation is charged for a full year on all fixed assets acquired during the year, and no depreciation is charged on fixed assets disposed of during the year.

Feb. 3	A building that cost $132,000 in 2008 is torn down to make room for a new building. The wrecking contractor was paid $5,100 and was permitted to keep all materials salvaged.
Apr. 10	A gear breaks on a machine that cost $9,000 in 2017. The gear is replaced at a cost of $2,000. The replacement does not extend the useful life of the machine but does make the machine more efficient.
May 18	A special base installed for a machine in 2019 when the machine was purchased has to be replaced at a cost of $5,500 because of defective workmanship on the original base. The cost of the machinery was $14,200 in 2019. The cost of the base was $3,500, and this amount was charged to the Machinery account in 2019.
June 5	One of the buildings is repainted at a cost of $6,900. It had not been painted since it was constructed in 2021.

INSTRUCTIONS

Prepare journal entries for the transactions. (Round to the nearest dollar.)

SOLUTION

February 3, 2025

Accumulated Depreciation—Buildings	112,200*	
Loss on Disposal of Buildings	24,900**	
Buildings		132,000
Cash		5,100

*.05 × $132,000 = $6,600; $6,600 × 17 years = $112,200
**($132,000 – $112,200) + $5,100

April 10, 2025

Machinery	2,000	
Cash		2,000

This replacement is treated as a capital expenditure since it makes the machine more efficient.

May 18, 2025

Machinery	5,500	
Accumulated Depreciation—Machinery	2,100*	
Loss on Disposal of Machinery	1,400**	
Machinery		3,500
Cash		5,500

*.10 × $3,500 = $350; $350 × 6 years = $2,100
**$3,500 – $2,100

This is a replacement being accounted for using the substitution approach.

June 5, 2025

Maintenance and Repairs Expense	6,900	
Cash		6,900

This is a revenue expenditure that is expensed immediately. Repainting is considered ordinary maintenance.

9.5 Disposition of Property, Plant, and Equipment

LEARNING OBJECTIVE 5

Describe the accounting treatment for the disposal of property, plant, and equipment.

A company may retire plant assets voluntarily or dispose of them by sale, exchange, involuntary conversion, or abandonment. Regardless of the type of disposal, depreciation must be taken up to the date of disposition. Then, the company should remove all accounts related to the retired asset.

Generally, the book value of the plant asset does not equal its disposal value. Why not? Because depreciation is an estimate of cost allocation and **not** a process of valuation. As a result, a gain or loss is recognized on the disposal. You can think of the gain or loss as a correction of net income for the years during which the asset was used.

Sale of Plant Assets

Companies record depreciation for the period of time between the date of the last depreciation entry and the date of sale.

Example 9.23
Sale of Asset

FACTS Barret Company recorded depreciation on a machine costing $18,000 for 9 years at the rate of $1,200 per year. It sells the machine in the middle of the tenth year for $7,000.

QUESTION What entry would you make to record this transaction?

SOLUTION

To record depreciation for the first half of the 10th year:

Depreciation Expense ($1,200 × ½)	600	
Accumulated Depreciation—Machinery		600

To record the sale of the asset:

Cash	7,000	
Accumulated Depreciation—Machinery [($1,200 × 9) + $600]	11,400	
Machinery		18,000
Gain on Disposal of Machinery		400

The book value of the machinery at the time of the sale is $6,600 ($18,000 − $11,400). Because the machinery sold for $7,000, the amount of the gain on the sale is $400 ($7,000 − $6,600).

Involuntary Conversion

Sometimes an asset's service is terminated through an **involuntary conversion** such as fire, flood, theft, or condemnation. Companies account for an involuntary conversion as follows.

1. Report the difference between the amount recovered (e.g., from a condemnation award or insurance recovery), if any, and the asset's book value as a gain or loss.
2. Treat the gain or loss like any other type of disposition.
3. Report the gain or loss as other revenues and gains or other expenses and losses in the income statement.

Example 9.24
Involuntary Conversion

FACTS Camel Transport Corp. had to sell a plant located on company property that stood directly in the path of an interstate highway. For a number of years, the state had sought to purchase the land on which the plant stood, but the company resisted. The state ultimately exercised its right of eminent domain, which the courts upheld. In settlement, Camel received $500,000, which substantially exceeded the $200,000 book value of the plant and land (cost of $400,000 less accumulated depreciation of $200,000).

QUESTION How would you record this involuntary conversion?

SOLUTION

To record the involuntary conversion:

Cash	500,000	
Accumulated Depreciation—Plant Assets	200,000	
Plant Assets		400,000
Gain on Disposal of Plant Assets		300,000

The gain is calculated as follows.

Cash received		$500,000
Less: Book value of plant and land		
Cost	$400,000	
Accumulated depreciation	(200,000)	200,000
Gain on disposition		$300,000

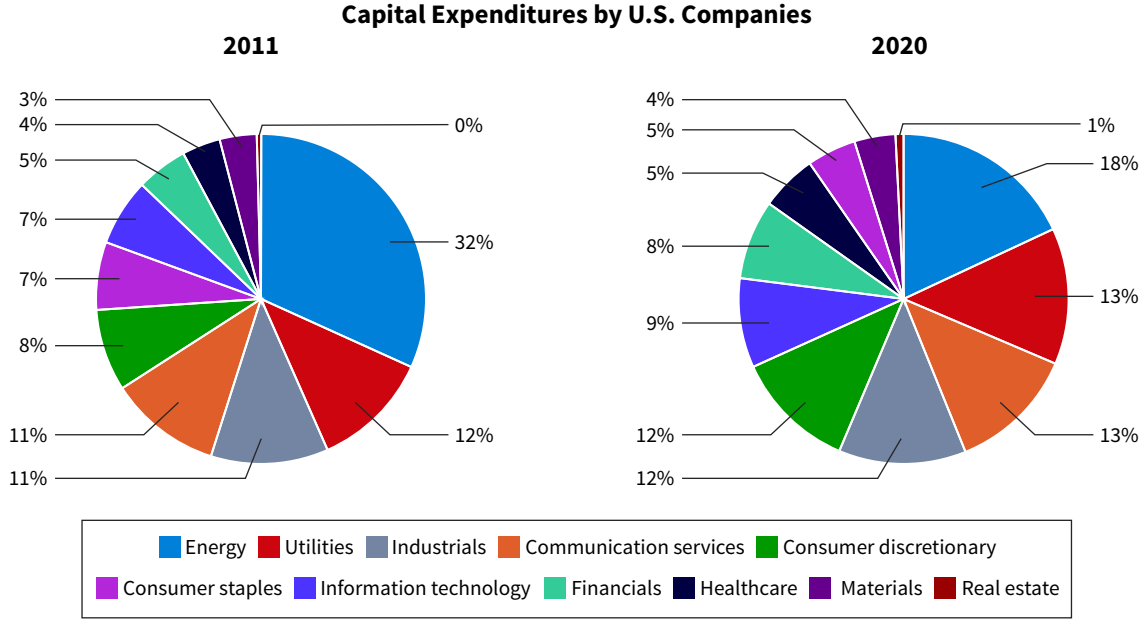
If a company scraps or abandons an asset without any cash recovery, it recognizes a loss equal to the asset's book value. If scrap value exists, the gain or loss that occurs is the difference between the asset's scrap value and its book value. If an asset still can be used even though it is fully depreciated, it may be kept on the books at historical cost less depreciation, with proper disclosure.

Some object to the recognition of a gain or loss in certain **involuntary** conversions. For example, the federal government often condemns forests for national parks. The paper companies that owned these forests must report a gain or loss on the condemnation. However, companies such as **Georgia-Pacific** contend that no gain or loss should be reported because they must replace the condemned forest land immediately and so are in the same economic position as they were before. The issue is whether condemnation and subsequent purchase should be viewed as one or two transactions. GAAP requires "that a gain or loss be recognized when a nonmonetary asset is involuntarily converted to monetary assets even though an enterprise reinvests or is obligated to reinvest the monetary assets in replacement nonmonetary assets." **[9]**

Analytics in Action: Capital Expenditure Trends

Capital expenditures is an important metric for any company. It tells us the investment a company is making not only in maintaining existing assets, but whether it is investing in growth and innovation. Capital expenditures is a longer-term metric that help investors understand the strategic direction of a company. For example, **Amazon.com** recently invested $40 billion in capital expenditures to expand fulfillment centers and bolster technology infrastructure to support Amazon Web Services. Analyzing trends in capital expenditures over time by company and industry can provide valuable insights to financial statement users.

The following charts show a shift from 2011–2020 in which industries are making in capital expenditures.



Source: S & P Global Market Intelligence.

Capital expenditures in the energy industry declined from 32% to 18%. At the same time, investments by companies in the financial, information technology, and consumer discretionary industries has increased.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

APPENDIX 9A

Accounting for Contributions

LEARNING OBJECTIVE *6

Describe the accounting for contributions.

Companies sometimes receive or make contributions (often referred to as grants, donations, or gifts). A **contribution** is often some type of asset (such as cash, securities, land, or buildings), services, or use of facilities, but it also could be the forgiveness of a debt. The accounting for contributions is generally straightforward.

- The recipient records the asset received and contribution revenue at the fair value of the asset(s) received.
- The donor (resource provider) records a contribution expense for the fair value of the asset(s) donated.

Contributions are either unconditional or conditional. The criteria for evaluating whether contributions are unconditional (and thus recognized immediately in income) or conditional (for which income recognition is deferred) depend on the terms of the gift or grant agreement. The focus is whether a gift or grant agreement has the following terms.

1. Specifies a "barrier or hurdle" that the recipient must overcome to be entitled to the resources. A barrier is the inclusion of a measurable performance requirement such as degree of completion or specific output or outcome.
2. Releases the donor from its obligation to transfer resources (or if assets are advanced, a right to demand their return) if the barrier or hurdle is not achieved by the recipient.

An agreement that contains both terms is a conditional contribution. An agreement that omits one or both is unconditional.[10] **[11]** The distinction between a conditional and unconditional contribution is important from an accounting point of view because it affects when expense and revenue are reported.

Conditional Contribution

Example 9A.1 presents an analysis of a conditional contribution made by State Insurance Company to Disabled Veterans (DV), a not-for-profit organization.

Example 9A.1
Conditional Contribution

FACTS State Insurance Company agrees to contribute $1,000,000 to DV to provide specific career training to disabled veterans. The contribution requires DV to provide training to at least 8,000 disabled veterans during the next fiscal year, with specified minimum targets that must be met each quarter. State Insurance requires a right of release stipulation from the obligation in that it will only give DV $250,000 each quarter if DV demonstrates that those services have been provided to at least 2,000 disabled veterans during the quarter. State Insurance makes the payments at the end of each quarter.

QUESTION Is the arrangement between State Insurance Company and DV a conditional contribution? Explain.

[10]The accounting for contributions applies to both business entities and not-for-profits. **[10]** Although GAAP is silent on how to account for the transfers of assets **from governmental units to business enterprises**, the FASB is working on a project to develop disclosure requirements about government assistance (see the FASB website; click on the Presentation and Disclosure tab under the Technical Agenda). However, we believe that these basic recognition requirements should also hold for these types of contributions. Therefore, companies should record all assets at fair value and all credits as revenue.

SOLUTION

State Insurance Company and DV conclude that this contribution is conditional. The agreement contains a right of release from the obligation because State Insurance will only transfer assets if DV provides training to 8,000 disabled veterans during the year (with a minimum requirement of 2,000 disabled veterans per quarter). State Insurance requires DV to achieve a specific level of service that would be considered a measurable performance-related barrier (in the form of milestones by specifying 2,000 disabled veterans per quarter).

In the situation described in Example 9A.1, assuming the first quarter milestone is met, State Insurance Company would make the following entry.

Contribution Expense	250,000	
Cash		250,000

DV would also make an entry in the first quarter as follows.

Cash	250,000	
Contribution Revenue		250,000

If the arrangement between State Insurance and DV is such that the contribution is unconditional, the entries are as follows at the time of the agreement.

State Insurance Company

Contribution Expense	1,000,000	
Accounts Payable (DV)		1,000,000

DV

Accounts Receivable	1,000,000	
Contribution Revenue		1,000,000

Unconditional Contribution

Presented in Example 9A.2 is a contribution made by Progress Pharma Company to Gillar Science (a not-for-profit).

Example 9A.2
Unconditional Contribution

FACTS Gillar Science receives a grant of land with a fair value of $1 million (cost of $600,000) from Progress Pharma Company to build additional research facilities to advance Gillar Science's study on stem cell adaptations. Progress Pharma does not specify any restrictions to the grant.

QUESTION Is the arrangement between Gillar Science and Progress Pharma unconditional? If so, prepare the journal entry for Gillar Science.

SOLUTION

This grant is unconditional, as there are no restrictions associated with the contribution. Gillar Science records the land received at its fair value and contribution revenue as follows.

Land	1,000,000	
Contribution Revenue		1,000,000

When Progress Pharma contributes land in Example 9A.2, it records the donation as contribution expense at $1,000,000 (the fair value of the land). Because a difference exists between the fair value of the land and its book value, Progress Pharma should record a gain

of $400,000. As indicated, the land has a cost basis of $600,000. The entry to record this contribution is as follows.

Contribution Expense	1,000,000	
Land		600,000
Gain on Disposal of Land		400,000

Exchange Transactions

In the examples thus far, the contributions arose because both State Insurance and Progress Pharma did not receive any value in exchange for the assets transferred, or the value received was incidental to the potential public benefit using the asset transferred. What happens, however, if both the recipient and the resource provider agree on the amount of assets transferred in goods or services—which are essentially of the same value? In this case, the gift or grant is no longer considered a contribution for accounting purposes but is accounted for as an exchange.

Presented in Example 9A.3 is a grant made by Precision Company (a pharmaceutical company) to Outstanding University, a not-for-profit organization.[11]

Example 9A.3 Contribution or Exchange?

FACTS Outstanding University is a large research university with a cancer research department. Outstanding University receives $800,000 from Precision Company to finance the cost of a clinical trial of an experimental cancer drug that Precision developed. Precision specifies the protocol of the testing, including the number of participants to be tested, the dosages to be administered, and the frequency of follow-up examinations. Precision requires a detailed report of the test outcomes within three months of the test's conclusions; the rights to the results of the study belong to Outstanding University.

QUESTION Should this arrangement be considered an exchange? Explain.

SOLUTION

Outstanding University and Precision Company should consider this grant to be an exchange transaction. Because the results of the clinical trial have commercial value for Precision, Precision is receiving commensurate value as the resource provider. Therefore, the receipt of the resources is not a contribution received by Outstanding University, nor is the disbursement of the resources a contribution made by Precision. The accounting for this transaction would follow the normal rules for exchanges using the revenue recognition guidelines discussed in Chapters 3 and 17 **[12]**.

In summary, if the resource provider has full discretion in determining the amount of the transferred assets, the transaction is considered a contribution. If both the recipient and the resource provider agree on the amount of assets transferred in exchange for goods and services that are of commensurate value, the transaction is an exchange transaction.[12]

[11]The FASB decided that including both a barrier and either a right of return of assets transferred or a right of release of the promisor's obligation to transfer assets better reflects the economics of the transaction. That is, without barriers, the right of return or right of release has little substance. Similarly, without right of return or right of release, failure to meet barriers has little substance. See Accounting Standards Update 2018-08, *Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made* (Norwalk, Conn.: FASB, June 2018), par. BC 18.

[12]The examples for conditional contribution arrangements and exchange transactions are adapted from Accounting Standards Update 2018-08, *Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made* (Norwalk, Conn.: FASB, June 2018), par. BC 18, Examples 13 and 8, respectively.

Review and Practice

Key Terms Review

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additions 9-27
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avoidable interest 9-11
capital expenditure 9-27
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commercial substance 9-19
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Learning Objectives Review

1 Identify property, plant, and equipment and its related costs.

The major characteristics of property, plant, and equipment are as follows. (1) They are acquired for use in operations and not for resale. (2) They are long-term in nature and usually subject to depreciation. (3) They possess physical substance. The costs included in initial valuation of property, plant, and equipment are as follows.

Cost of land. Includes all expenditures made to acquire land and to ready it for use. Land costs typically include (1) the purchase price; (2) closing costs, such as title to the land, attorney's fees, and recording fees; (3) costs incurred in getting the land in condition for its intended use, such as grading, filling, draining, and clearing; (4) assumption of any liens, mortgages, or encumbrances on the property; and (5) any additional land improvements that have an indefinite life.

Cost of buildings. Includes all expenditures related directly to their acquisition or construction. These costs include (1) materials, labor, and overhead costs incurred during construction, and (2) professional fees and building permits.

Cost of equipment. Includes the purchase price, freight and handling charges incurred, insurance on the equipment while in transit, cost of special foundations if required, assembling and installation costs, and costs of conducting trial runs.

Self-constructed assets. Indirect costs of manufacturing create special problems because companies cannot easily trace these costs directly to work and material orders related to the constructed assets. Companies might handle these costs in one of two ways: (1) assign no fixed overhead to the cost of the constructed asset, or (2) assign a portion of all overhead to the construction process. Companies use the second method extensively.

Asset retirement obligations (AROs). A company must recognize AROs when it has an existing legal obligation related to the retirement of a long-lived asset and it can reasonably estimate the amount. AROs are recorded as a cost of the related asset because these costs are directly related to operating the asset and are necessary to prepare the asset for its intended use.

2 Discuss the accounting problems associated with interest capitalization.

Only actual interest (with modifications) should be capitalized. The rationale for this approach is that during construction, the asset is not generating revenue and therefore companies should defer (capitalize) interest cost. Once construction is completed, the asset is ready for its intended use and revenues can be recognized. Any interest cost incurred in purchasing an asset that is ready for its intended use should be expensed.

3 Explain the accounting issues related to acquiring and valuing plant assets.

The following issues relate to acquiring and valuing plant assets. (1) **Cash discounts**. Whether taken or not, they are generally considered a reduction in the cost of the asset; the real cost of the asset is the cash or cash equivalent price of the asset. (2) **Deferred-payment contracts.** Companies account for assets purchased on long-term credit contracts at the present value of the consideration exchanged between the contracting parties. (3) **Lump-sum purchase**. Allocate the total cost among the various assets on the basis of their relative fair values. (4) **Issuance of stock.** If the stock is actively traded, the market price of the stock issued is a fair indication of the cost of the property acquired. If the market price of the common stock exchanged is not determinable, establish the fair value of the property and use it as the basis for recording the asset and issuance of the common stock. (5) **Exchanges of nonmonetary assets**. The accounting for exchanges of nonmonetary assets depends on whether the exchange has commercial substance. See Illustrations 9.7 and 9.9 for summaries of how to account for exchanges.

4 Describe the accounting treatment for costs subsequent to acquisition.

Illustration 9.11 summarizes how to account for costs subsequent to acquisition.

5 Describe the accounting treatment for the disposal of property, plant, and equipment.

Regardless of the time of disposal, companies take depreciation up to the date of disposition and then remove all accounts related to the retired asset. Gains or losses on the retirement of plant assets are shown in the income statement along with other items that arise from customary business activities. Gains or losses on involuntary conversions are reported as other revenues and gains or other expenses and losses in the income statement.

*6 Describe the accounting for contributions.

Recipients of contributions record the asset received and contribution revenue at the fair value of the asset(s) received. The donor records Contribution Expense for the fair value of the asset(s) donated. The timing of recognition of revenue and expense depends on whether the contribution (1) includes a hurdle and (2) releases the donor from any obligation if the hurdle is not met by the recipient. An agreement that contains both terms is a conditional contribution. An agreement that omits one or both is unconditional. If the contribution arrangement is such that both the recipient and the donor agree on the amount of assets transferred in goods or services that are essentially of the same value, the gift or grant is no longer considered a contribution but is accounted for as an exchange.

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Note: All asterisked Questions, Exercises, and Problems relate to the material in the appendix to the chapter.

Questions

1. What are the major characteristics of plant assets?

2. Mickelson Inc. owns land that it purchased on January 1, 2005, for $450,000. At December 31, 2025, its current value is $770,000 as determined by appraisal. At what amount should Mickelson report this asset on its December 31, 2025, balance sheet? Explain.

3. Name the items, in addition to the amount paid to the former owner or contractor, that may properly be included as part of the acquisition cost of the following plant assets.
   a. Land.
   b. Machinery and equipment.
   c. Buildings.

4. Indicate where the following items would be shown on a balance sheet.
   a. A lien that was attached to the land when purchased.
   b. Landscaping costs.
   c. Attorney's fees and recording fees related to purchasing land.
   d. Variable overhead related to construction of machinery.
   e. A parking lot servicing employees in the building.
   f. Cost of temporary building for workers during construction of building.
   g. Interest expense on bonds payable incurred during construction of a building.
   h. Assessments for sidewalks that are maintained by the city.
   i. The cost of demolishing an old building that was on the land when purchased.

5. Two positions have normally been taken with respect to the recording of fixed manufacturing overhead as an element of the cost of plant assets constructed by a company for its own use:
   a. It should be excluded completely.
   b. It should be included at the same rate as is charged to normal operations.

What are the circumstances or rationale that support or deny the application of these methods?

6. The Buildings account of Postera Inc. includes the following items that were used in determining the basis for depreciating the cost of a building.
   a. Organization and promotion expenses.
   b. Architect's fees.
   c. Interest and taxes during construction.
   d. Interest revenue on investments held to fund construction of a building.

Do you agree with these charges? If not, how would you deal with each of the items above in the corporation's books and in its annual financial statements?

7. Burke Company has purchased two tracts of land. One tract will be the site of its new manufacturing plant, while the other is being purchased with the hope that it will be sold in the next year at a profit. How should these two tracts of land be reported in the balance sheet?

8. When must a company recognize an asset retirement obligation?

9. One financial accounting issue encountered when a company constructs its own plant is whether the interest cost on funds borrowed to finance construction should be capitalized and then amortized over the life of the assets constructed. What is the justification for capitalizing such interest?

10. Provide examples of assets that do not qualify for interest capitalization.

11. What interest rates should be used in determining the amount of interest to be capitalized? How should the amount of interest to be capitalized be determined?

12. How should the amount of interest capitalized be disclosed in the notes to the financial statements? How should interest revenue from temporarily invested excess funds borrowed to finance the construction of assets be accounted for?

13. Discuss the basic accounting problem that arises in handling each of the following situations.

a. Assets purchased by issuance of common stock.

b. Acquisition of plant assets by gift or donation.

c. Purchase of a plant asset subject to a cash discount.

d. Assets purchased on a long-term credit basis.

e. A group of assets acquired for a lump sum.

f. An asset traded in or exchanged for another asset.

14. Magilke Industries acquired equipment this year to be used in its operations. The equipment was delivered by the suppliers, installed by Magilke, and placed into operation. Some of it was purchased for cash with discounts available for prompt payment. Some of it was purchased under long-term payment plans for which the interest charges approximated prevailing rates. What costs should Magilke capitalize for the new equipment purchased this year? Explain.

15. Schwartzkopf Co. purchased for $2,200,000 property that included both land and a building to be used in operations. The seller's book value was $300,000 for the land and $900,000 for the building. By appraisal, the fair value was estimated to be $500,000 for the land and $2,000,000 for the building. At what amount should Schwartzkopf report the land and the building at the end of the year?

16. Pueblo Co. acquires machinery by paying $10,000 cash and signing a $5,000, 2-year, zero-interest-bearing note payable. The note has a present value of $4,208, and Pueblo purchased a similar machine last month for $13,500. At what cost should the new equipment be recorded?

17. Stan Ott is evaluating two recent transactions involving exchanges of equipment. In one case, the exchange has commercial substance. In the second situation, the exchange lacks commercial substance. Explain to Stan the differences in accounting for these two situations.

18. Crowe Company purchased a heavy-duty truck on July 1, 2021, for $30,000. It was estimated that it would have a useful life of 10 years and then would have a trade-in value of $6,000. The company uses the straight-line method. It was traded on August 1, 2026, for a similar truck costing $42,000; $16,000 was allowed as trade-in value (also fair value) on the old truck and $26,000 was paid in cash. A comparison of expected cash flows for the trucks indicates the exchange lacks commercial substance. What is the entry to record the trade-in?

19. Once equipment has been installed and placed in operation, subsequent expenditures relating to this equipment are frequently thought of as repairs or general maintenance and, hence, chargeable to operations in the period in which the expenditure is made. Actually, determination of whether such an expenditure should be charged to operations or capitalized involves a much more careful analysis of the character of the expenditure. What are the factors that should be considered in making such a decision? Discuss fully.

20. What accounting treatment is normally given to the following items in accounting for plant assets?

a. Additions.

b. Major repairs.

c. Improvements and replacements.

21. New machinery, which replaced a number of employees, was installed and put in operation in the last month of the fiscal year. The employees had been dismissed after payment of an extra month's wages, and this amount was added to the cost of the machinery. Discuss the propriety of the charge. If it was improper, describe the proper treatment.

22. To what extent do you consider the following items to be proper costs of the fixed asset? Give reasons for your opinions.

a. Overhead of a business that builds its own equipment.

b. Cash discounts on purchases of equipment.

c. Interest paid during construction of a building.

d. Cost of a safety device installed on a machine.

e. Freight on equipment returned before installation, for replacement by other equipment of greater capacity.

f. Cost of moving machinery to a new location.

g. Cost of plywood partitions erected as part of the remodeling of the office.

h. Replastering of a section of the building.

i. Cost of a new motor for one of the trucks.

j. Cost to restore land after extracting ore.

23. Neville Enterprises has a number of fully depreciated assets that are still being used in the main operations of the business. Because the assets are fully depreciated, the president of the company decides not to show them on the balance sheet or disclose this information in the notes. Evaluate this procedure.

24. What are the general rules for how gains or losses on retirement of plant assets should be reported in income?

*25. What is the difference between a conditional and unconditional contribution?

*26. Why is the distinction between a conditional and unconditional contribution important for accounting purposes?

Brief Exercises

BE9.1 **(LO 1)** Previn Brothers Inc. purchased land at a price of $27,000. Closing costs were $1,400. An old building was removed at a cost of $10,200. What amount should be recorded as the cost of the land?

BE9.2 (LO 1) Schultz Department Store determines it will cost $100,000 to restore the area (considered a land improvement) surrounding one of its store parking lots, when the store is closed in 2 years. Schultz estimates the fair value of the obligation at December 31, 2025, is $84,000. Prepare the journal entry to record the asset retirement obligation.

BE9.3 (LO 1) Calaf's Drillers erects and places into service an off-shore oil platform on January 1, 2025, at a cost of $10,000,000. Calaf estimates it will cost $1,000,000 to dismantle and remove the platform at the end of its useful life in 10 years, which the company is legally required to do. (The fair value at January 1, 2025, of the dismantle and removal costs is $450,000.) Prepare the entry to record the asset retirement obligation.

BE9.4 (LO 2) Hanson Company is constructing a building. Construction began on February 1 and was completed on December 31. Expenditures were $1,800,000 on March 1, $1,200,000 on June 1, and $3,000,000 on December 31. Compute Hanson's weighted-average accumulated expenditures for interest capitalization purposes.

BE9.5 (LO 2) Hanson Company (see BE9.4) borrowed $1,000,000 on March 1 on a 5-year, 12% note to help finance construction of the building. In addition, the company had outstanding all year a 10%, 5-year, $2,000,000 note payable and an 11%, 4-year, $3,500,000 note payable. Compute the weighted-average interest rate used for interest capitalization purposes.

BE9.6 (LO 2) Use the information for Hanson Company from BE9.4 and BE9.5. Compute avoidable interest for Hanson Company.

BE9.7 (LO 3) Garcia Corporation purchased a truck by issuing an $80,000, 4-year, zero-interest-bearing note to Equinox Inc. The market rate of interest for obligations of this nature is 10%. Prepare the journal entry to record the purchase of this truck.

BE9.8 (LO 3) Mohave Inc. purchased land, building, and equipment from Laguna Corporation for a cash payment of $315,000. The estimated fair values of the assets are land $60,000, building $220,000, and equipment $80,000. At what amounts should each of the three assets be recorded?

BE9.9 (LO 3) Fielder Company obtained land by issuing 2,000 shares of its $10 par value common stock. The land was recently appraised at $85,000. The common stock is actively traded at $40 per share. Prepare the journal entry to record the acquisition of the land.

BE9.10 (LO 3) Navajo Corporation traded a used truck (cost $20,000, accumulated depreciation $18,000) for a small computer with a fair value of $3,300. Navajo also paid $500 in the transaction. Prepare the journal entry to record the exchange. (The exchange has commercial substance.)

BE9.11 (LO 3) Use the information for Navajo Corporation from BE9.10. Prepare the journal entry to record the exchange, assuming the exchange lacks commercial substance.

BE9.12 (LO 3) Mehta Company traded a used welding machine (cost $9,000, accumulated depreciation $3,000) for office equipment with an estimated fair value of $5,000. Mehta also paid $3,000 cash in the transaction. Prepare the journal entry to record the exchange. (The exchange has commercial substance.)

BE9.13 (LO 3) Cheng Company traded a used truck for a new truck. The used truck cost $30,000 and has accumulated depreciation of $27,000. The new truck is worth $37,000. Cheng also made a cash payment of $36,000. Prepare Cheng's entry to record the exchange. (The exchange lacks commercial substance.)

BE9.14 (LO 3) Slaton Corporation traded a used truck for a new truck. The used truck cost $20,000 and has accumulated depreciation of $17,000. The new truck is worth $35,000. Slaton also made a cash payment of $33,000. Prepare Slaton's entry to record the exchange. (The exchange has commercial substance.)

BE9.15 (LO 4) Indicate which of the following costs should be expensed when incurred.

a. $13,000 paid to rearrange and reinstall machinery.

b. $200,000 paid for addition to building.

c. $200 paid for tune-up and oil change on delivery truck.

d. $7,000 paid to replace a wooden floor with a concrete floor.

e. $2,000 paid for a major overhaul on a truck, which extends the useful life.

BE9.16 (LO 5) Ottawa Corporation owns machinery that cost $20,000 when purchased on July 1, 2021. Depreciation has been recorded at a rate of $2,400 per year, resulting in a balance in accumulated depreciation of $8,400 at December 31, 2025. The machinery is sold on September 1, 2026, for $10,500. Prepare journal entries to (a) update depreciation for 2026 and (b) record the sale.

BE9.17 (LO 5) Use the information presented for Ottawa Corporation in BE9.16, but assume the machinery is sold for $5,200 instead of $10,500. Prepare journal entries to (a) update depreciation for 2026 and (b) record the sale.

***BE9.18 (LO 6)** Research Science Inc. provides funding to University Hospital to perform a research study on the benefits of a new drug for insomnia. The agreement requires University Hospital to plan the study, perform the research, and summarize and submit the research to Research Science. Research Science retains all rights to the study. Explain whether this is an exchange transaction or a contribution.

***BE9.19 (LO 6)** Pet Aware is an animal shelter and receives an upfront, unsolicited 2-year grant of $800,000 from Kindig Company (the owner of Kindig is a dog lover). The grant specifies that the money should be used to expand Pet Aware's operations. The agreement indicates that Pet Aware must expand its operations by 6,000 square feet to accommodate additional animals by the end of 2 years. The grant contains a right of return for any unused assets. Explain whether this grant is an unconditional or conditional grant.

***BE9.20 (LO 6)** Knowledge University received a grant from a private foundation to conduct scientific research for purposes of discovering planets potentially habitable to humans. Knowledge University is required to submit a summary of research findings to the foundation at the end of the study, but Knowledge University retains all rights to the findings and has permission to publish them, if desired. Is this an exchange or nonexchange arrangement? Explain.

Exercises

E9.1 (LO 1) (Acquisition Costs of Realty) The following expenditures and receipts are related to land, land improvements, and buildings acquired for use in a business enterprise. The receipts are enclosed in parentheses.

a.	Money borrowed to pay building contractor (signed a note)	$(275,000)
b.	Payment for construction from note proceeds	275,000
c.	Cost of land fill and clearing	8,000
d.	Delinquent real estate taxes on property assumed by purchaser	7,000
e.	Premium on 6-month insurance policy during construction	6,000
f.	Refund of 1-month insurance premium because construction completed early	(1,000)
g.	Architect's fee on building	22,000
h.	Cost of real estate purchased as a plant site (land $200,000 and building $50,000)	250,000
i.	Commission fee paid to real estate agency	9,000
j.	Installation of fences around property	4,000
k.	Cost of razing and removing building	11,000
l.	Proceeds from salvage of demolished building	(5,000)
m.	Interest paid during construction on money borrowed for construction	13,000
n.	Cost of parking lots and driveways	19,000
o.	Cost of trees and shrubbery planted (permanent in nature)	14,000
p.	Excavation costs for new building	3,000

Instructions

Identify each item by letter and list the items in columnar form, using the headings shown below. All receipt amounts should be reported in parentheses. For any amounts entered in the Other Accounts column, also indicate the account title.

Item	Land	Land Improvements	Buildings	Other Accounts

E9.2 (LO 1) Excel (Acquisition Costs of Realty) Martin Buber Co. purchased land as a factory site for $400,000. The process of tearing down two old buildings on the site and constructing the factory required 6 months.

The company paid $42,000 to raze the old buildings and sold salvaged lumber and brick for $6,300. Legal fees of $1,850 were paid for title investigation and drawing the purchase contract. Martin Buber paid $2,200 to an engineering firm for a land survey, and $68,000 for drawing the factory plans. The land survey had to be made before definitive plans could be drawn. Title insurance on the property cost $1,500, and a liability insurance premium paid during construction was $900. The contractor's charge

for construction was $2,740,000. The company paid the contractor in two installments: $1,200,000 at the end of 3 months and $1,540,000 upon completion. Interest costs of $170,000 were incurred to finance the construction.

Instructions

Determine the cost of the land and the cost of the building as they should be recorded on the books of Martin Buber Co. Assume that the land survey was for the building.

E9.3 (LO 1) Excel (Acquisition Costs of Trucks) Kelly Clarkson Corporation operates a retail computer store. To improve delivery services to customers, the company purchases four new trucks on April 1, 2025. The terms of acquisition for each truck are described below.

1. Truck #1 has a list price of $15,000 and is acquired for a cash payment of $13,900.
2. Truck #2 has a list price of $16,000 and is acquired for a down payment of $2,000 cash and a zero-interest-bearing note with a face amount of $14,000. The note is due April 1, 2026. Clarkson would normally have to pay interest at a rate of 10% for such a borrowing, and the dealership has a borrowing rate of 8%.
3. Truck #3 has a list price of $16,000. It is acquired in exchange for a computer system that Clarkson carries in inventory. The computer system cost $12,000 and is normally sold by Clarkson for $15,200. Clarkson uses a perpetual inventory system.
4. Truck #4 has a list price of $14,000. It is acquired in exchange for 1,000 shares of common stock in Clarkson Corporation. The stock has a par value per share of $10 and a market price of $13 per share.

Instructions

Prepare the appropriate journal entries for the above transactions for Clarkson Corporation.

E9.4 (LO 1) (Purchase and Self-Constructed Cost of Assets) Worf Co. both purchases and constructs various equipment it uses in its operations. The following items for two different types of equipment were recorded in random order during the calendar year 2025.

Purchase	
Cash paid for equipment, including sales tax of $5,000	$105,000
Freight and insurance cost while in transit	2,000
Cost of moving equipment into place at factory	3,100
Wage cost for technicians to test equipment	4,000
Insurance premium paid during first year of operation on this equipment	1,500
Special plumbing fixtures required for new equipment	8,000
Repair cost incurred in first year of operations related to this equipment	1,300

Construction	
Material and purchased parts (gross cost $200,000; failed to take 2% cash discount)	$200,000
Imputed interest on funds obtained from stock financing used during construction	14,000
Labor costs	190,000
Allocated overhead costs (fixed—$20,000; variable—$30,000)	50,000
Profit on self-construction	30,000
Cost of installing equipment	4,400

Instructions

Compute the total cost for each of these two pieces of equipment. If an item is not capitalized as a cost of the equipment, indicate how it should be reported.

E9.5 (LO 1) (Asset Retirement Obligation) Oil Products Company purchases an oil tanker depot on January 1, 2025, at a cost of $600,000. Oil Products expects to operate the depot for 10 years, at which time it is legally required to dismantle the depot and remove the underground storage tanks. The company estimates the dismantle and removal will cost $75,000 at the end of the depot's useful life.

Instructions

a. Prepare the journal entries to record the depot and asset retirement obligation for the depot on January 1, 2025. Based on an effective-interest rate of 6%, the present value of the asset retirement obligation on January 1, 2025, is $41,879.

b. Prepare any journal entries required for the depot and the asset retirement obligation at December 31, 2025. Oil Products uses straight-line depreciation; the estimated salvage value for the depot is zero.

c. On December 31, 2034, Oil Products pays a demolition firm to dismantle the depot and remove the tanks at a price of $80,000. Prepare the journal entry for the settlement of the asset retirement obligation.

E9.6 (LO 1, 2) (Treatment of Various Costs) Ben Sisko Supply Company, a newly formed corporation, incurred the following expenditures related to Land, to Buildings, and to Machinery and Equipment.

Abstract company's fee for title search		$ 520
Architect's fees		3,170
Cash paid for land and dilapidated building thereon		87,000
Removal of old building	$20,000	
Less: Salvage	5,500	14,500
Interest on short-term loans during construction		7,400
Excavation before construction for basement		19,000
Machinery purchased (subject to 2% cash discount, which was not taken)		55,000
Freight on machinery purchased		1,340
Storage charges on machinery, necessitated by noncompletion of building when machinery was delivered		2,180
New building constructed (building construction took 6 months from date of purchase of land and old building)		485,000
Assessment by city for drainage project		1,600
Hauling charges for delivery of machinery from storage to new building		620
Installation of machinery		2,000
Trees, shrubs, and other landscaping after completion of building (permanent in nature)		5,400

Instructions

Determine the amounts that should be debited to Land, to Buildings, and to Machinery and Equipment. Assume the benefits of capitalizing interest during construction exceed the cost of implementation. Indicate how any costs not debited to these accounts should be recorded.

E9.7 (LO 1, 3, 6) (Correction of Improper Cost Entries) Plant acquisitions for selected companies are as follows.

1. Belanna Industries Inc. acquired land, buildings, and equipment from a bankrupt company, Torres Co., for a lump-sum price of $700,000. At the time of purchase, Torres's assets had the following book and appraisal values.

	Book Values	Appraisal Values
Land	$200,000	$150,000
Buildings	250,000	350,000
Equipment	300,000	300,000

To be conservative, the company decided to take the lower of the two values for each asset acquired. The following entry was made.

Land	150,000	
Buildings	250,000	
Equipment	300,000	
Cash		700,000

2. Harry Enterprises purchased store equipment by making a $2,000 cash down payment and signing a 1-year, $23,000, 10% note payable. The purchase was recorded as follows.

Equipment	27,300	
Cash		2,000
Notes Payable		23,000
Interest Payable		2,300

3. Kim Company purchased office equipment for $20,000, terms 2/10, n/30. Because the company intended to take the discount, it made no entry until it paid for the acquisition. The entry was:

Equipment	20,000	
Cash		19,600
Purchase Discounts		400

*4. Kaisson Inc. recently received at zero cost land from the Village of Cardassia as an inducement to locate its business in the Village. The appraised value of the land is $27,000. The company made no entry to record the land because it had no cost basis.

5. Zimmerman Company built a warehouse for $600,000. It could have purchased the building for $740,000. The controller made the following entry.

Buildings	740,000	
Cash		600,000
Profit on Construction		140,000

Instructions

Prepare the entry that should have been made at the date of each acquisition.

E9.8 (LO 2) (Capitalization of Interest) Harrisburg Furniture Company started construction of a combination office and warehouse building for its own use at an estimated cost of $5,000,000 on January 1, 2025. Harrisburg expected to complete the building by December 31, 2025. Harrisburg has the following debt obligations outstanding during the construction period.

Construction loan—12% interest, payable semiannually, issued December 31, 2024	$2,000,000
Short-term loan—10% interest, payable monthly, and principal payable at maturity on May 30, 2026	1,400,000
Long-term loan—11% interest, payable on January 1 of each year; principal payable on January 1, 2029	1,000,000

Instructions

(Carry all computations to two decimal places.)

a. Assume that Harrisburg completed the office and warehouse building on December 31, 2025, as planned, at a total cost of $5,200,000, and the weighted-average amount of accumulated expenditures was $3,600,000. Compute the avoidable interest on this project.

b. Compute the depreciation expense for the year ended December 31, 2026. Harrisburg elected to depreciate the building on a straight-line basis and determined that the asset has a useful life of 30 years and a salvage value of $300,000.

E9.9 (LO 2) (Capitalization of Interest) On December 31, 2024, Main Inc. borrowed $3,000,000 at 12% payable annually to finance the construction of a new building. In 2025, the company made the following expenditures related to this building: March 1, $360,000; June 1, $600,000; July 1, $1,500,000; December 1, $1,500,000. The building was completed in February 2026. Additional information is provided as follows.

1. Other debt outstanding:

10-year, 13% bond, December 31, 2018, interest payable annually	$4,000,000
6-year, 10% note, dated December 31, 2022, interest payable annually	1,600,000

2. March 1, 2025, expenditure included land costs of $150,000.

3. Interest revenue of $49,000 earned in 2025.

Instructions

a. Determine the amount of interest to be capitalized in 2025 in relation to the construction of the building.

b. Prepare the journal entry to record the capitalization of interest and the recognition of interest expense, if any, at December 31, 2025.

E9.10 (LO 2) (Capitalization of Interest) On July 31, 2025, Amsterdam Company engaged Minsk Tooling Company to construct a special-purpose piece of factory machinery. Construction began immediately and was completed on November 1, 2025. To help finance construction, on July 31 Amsterdam issued a $300,000, 3-year, 12% note payable at Netherlands National Bank, on which interest is payable each July 31. $200,000 of the proceeds of the note was paid to Minsk on July 31. The remainder of the proceeds was temporarily invested in short-term marketable securities (trading securities) at 10% until November 1. On November 1, Amsterdam made a final $100,000 payment to Minsk. Other than the note to Netherlands, Amsterdam's only outstanding liability at December 31, 2025, is a $30,000, 8%, 6-year note payable, dated January 1, 2022, on which interest is payable each December 31.

Instructions

a. Calculate weighted-average accumulated expenditures, avoidable interest, and total interest cost to be capitalized during 2025. (Round all computations to the nearest dollar.)

b. Prepare the journal entries needed on the books of Amsterdam Company at each of the following dates.

1. July 31, 2025.

2. November 1, 2025.

3. December 31, 2025.

E9.11 (LO 2) (Capitalization of Interest) The following three situations involve the capitalization of interest.

Situation I: On January 1, 2025, Ohno, Inc. signed a fixed-price contract to have Builder Associates construct a major plant facility at a cost of $4,000,000. It was estimated that it would take 3 years to complete the project. Also on January 1, 2025, to finance the construction cost, Ohno borrowed $4,000,000 payable in 10 annual installments of $400,000, plus interest at the rate of 10%. During 2025, Ohno made deposit and progress payments totaling $1,500,000 under the contract; the weighted-average amount of accumulated expenditures was $800,000 for the year. The excess borrowed funds were invested in short-term securities, from which Ohno realized investment income of $250,000.

Instructions

What amount should Ohno report as capitalized interest at December 31, 2025?

Situation II: During 2025, Zagitova Corporation constructed and manufactured certain assets and incurred the following interest costs in connection with those activities.

	Interest Costs Incurred
Warehouse constructed for Zagitova's own use	$30,000
Special-order machine for sale to unrelated customer, produced according to customer's specifications	9,000
Inventories routinely manufactured, produced on a repetitive basis	8,000

All of these assets required an extended period of time for completion.

Instructions

Assuming the effect of interest capitalization is material, what is the total amount of interest costs to be capitalized?

Situation III: Fleming, Inc. has a fiscal year ending April 30. On May 1, 2025, Fleming borrowed $10,000,000 at 11% to finance construction of its own building. Repayments of the loan are to commence the month following completion of the building. During the year ended April 30, 2026, expenditures for the partially completed structure totaled $7,000,000 (weighted-average accumulated expenditures were $3,500,000). Interest earned on the unexpended portion of the loan amounted to $650,000 for the year.

Instructions

How much should be shown as capitalized interest on Fleming's financial statements at April 30, 2026?
(CPA adapted)

E9.12 (LO 1, 3) (Entries for Equipment Acquisitions) Geddes Engineering Corporation purchased conveyor equipment with a list price of $10,000. Presented below are three independent cases related to the equipment. (Round to the nearest dollar.)

a. Geddes paid cash for the equipment 8 days after the purchase. The vendor's credit terms are 2/10, n/30. Assume that equipment purchases are initially recorded gross.

b. Geddes traded in equipment with a book value of $2,000 (initial cost $8,000), and paid $9,500 in cash one month after the purchase. The old equipment could have been sold for $400 at the date of trade. (The exchange has commercial substance.)

c. Geddes gave the vendor a $10,800 zero-interest-bearing note for the equipment on the date of purchase. The note was due in one year and was paid on time. Assume that the effective-interest rate in the market was 9%.

Instructions

Prepare the general journal entries required to record the acquisition and payment in each of the independent cases above.

E9.13 (LO 1, 3, 6) (Entries for Asset Acquisition, Including Self-Construction) Below are transactions related to Duffner Company.

***a.** The City of Pebble Beach gives the company 5 acres of land as a plant site. The fair value of this land is determined to be $81,000.

b. 13,000 shares of common stock with a par value of $50 per share are issued in exchange for land and buildings. The property has been appraised at a fair value of $810,000, of which $180,000 has been allocated to land and $630,000 to buildings. The stock of Duffner Company is not listed on any exchange, but a block of 100 shares was sold by a stockholder 12 months ago at $65 per share, and a block of 200 shares was sold by another stockholder 18 months ago at $58 per share.

c. No entry has been made to remove from the accounts for Materials, Direct Labor, and Overhead the amounts properly chargeable to plant asset accounts for machinery constructed during the year. The following information is given relative to costs of the machinery constructed.

Materials used	$12,500
Factory supplies used	900
Direct labor incurred	15,000
Additional overhead (over regular) caused by construction of machinery, excluding factory supplies used	2,700
Fixed overhead rate applied to regular manufacturing operations	60% of direct labor cost
Cost of similar machinery if it had been purchased from outside suppliers	44,000

Instructions

Prepare journal entries on the books of Duffner Company to record these transactions.

E9.14 (LO 1, 3) (Entries for Acquisition of Assets) Presented below is information related to Zonker Company.

1. On July 6, Zonker Company acquired the plant assets of Doonesbury Company, which had discontinued operations. The appraised value of the property is:

Land	$ 400,000
Buildings	1,200,000
Equipment	800,000
Total	$2,400,000

   Zonker Company gave 12,500 shares of its $100 par value common stock in exchange. The stock had a market price of $168 per share on the date of the purchase of the property.

2. Zonker Company expended the following amounts in cash between July 6 and December 15, the date when it first occupied the building.

Repairs to building	$105,000
Construction of bases for equipment to be installed later	135,000
Driveways and parking lots	122,000
Remodeling of office space in building, including new partitions and walls	161,000
Special assessment by city on land	18,000

3. On December 20, the company paid cash for equipment, $260,000, subject to a 2% cash discount, and freight on equipment of $10,500.

Instructions

Prepare entries on the books of Zonker Company for these transactions.

E9.15 (LO 3) (Purchase of Equipment with Zero-Interest-Bearing Debt) Flint Inc. has decided to purchase equipment from Central Michigan Industries on January 2, 2025, to expand its production capacity to meet customers' demand for its product. Flint issues an $800,000, 5-year, zero-interest-bearing note to Central Michigan for the new equipment when the prevailing market rate of interest for obligations of this nature is 12%. The company will pay off the note in five $160,000 installments due at the end of each year over the life of the note.

Instructions

(Round to nearest dollar in all computations.)

a. Prepare the journal entry (entries) at the date of purchase.

b. Prepare the journal entry (entries) at the end of the first year to record the payment and interest, assuming that the company employs the effective-interest method.

c. Prepare the journal entry (entries) at the end of the second year to record the payment and interest.

d. Assuming that the equipment had a 10-year life and no salvage value, prepare the journal entry necessary to record depreciation in the first year. (Straight-line depreciation is employed.)

E9.16 (LO 3) (Purchase of Computer with Zero-Interest-Bearing Debt) Cardinals Corporation purchased a computer on December 31, 2024, for $105,000, paying $30,000 down and agreeing to pay the balance in five equal installments of $15,000 payable each December 31 beginning in 2025. An assumed interest rate of 10% is implicit in the purchase price.

Instructions

(Round to two decimal places.)

a. Prepare the journal entry (entries) at the date of purchase.

b. Prepare the journal entry (entries) at December 31, 2025, to record the payment and interest (effective-interest method employed).

c. Prepare the journal entry (entries) at December 31, 2026, to record the payment and interest (effective-interest method employed).

E9.17 (LO 2, 3) Groupwork (Asset Acquisition) Hayes Industries purchased the following assets and constructed a building as well. All this was done during the current year.

Assets 1 and 2: These assets were purchased as a lump sum for $100,000 cash. The following information was gathered.

Description	Initial Cost on Seller's Books	Depreciation to Date on Seller's Books	Book Value on Seller's Books	Appraised Value
Machinery	$100,000	$50,000	$50,000	$90,000
Equipment	60,000	10,000	50,000	30,000

Asset 3: This machine was acquired by making a $10,000 down payment and issuing a $30,000, 2-year, zero-interest-bearing note. The note is to be paid off in two $15,000 installments made at the end of the first and second years. It was estimated that the asset could have been purchased outright for $35,900.

Asset 4: This machinery was acquired by trading in used machinery. (The exchange lacks commercial substance.) Facts concerning the trade-in are as follows.

Cost of machinery traded	$100,000
Accumulated depreciation to date of sale	40,000
Fair value of machinery traded	80,000
Cash received	10,000
Fair value of machinery acquired	70,000

Asset 5: Equipment was acquired by issuing 100 shares of $8 par value common stock. The stock had a market price of $11 per share.

Construction of Building: A building was constructed on land purchased last year at a cost of $150,000. Construction began on February 1 and was completed on November 1. The payments to the contractor were as follows.

Date	Payment
2/1	$120,000
6/1	360,000
9/1	480,000
11/1	100,000

To finance construction of the building, a $600,000, 12% construction loan was taken out on February 1. The loan was repaid on November 1. The firm had $200,000 of other outstanding debt during the year at a borrowing rate of 8%.

Instructions

Record the acquisition of each of these assets.

E9.18 (LO 3) (Nonmonetary Exchange) Busytown Corporation, which manufactures shoes, hired a recent college graduate to work in its accounting department. On the first day of work, the accountant was assigned to total a batch of invoices with the use of an adding machine. Before long, the accountant, who had never before seen such a machine, managed to break the machine. Busytown Corporation gave the machine plus $340 to Dick Tracy Business Machine Company (dealer) in exchange for a new machine. Assume the following information about the machines.

	Busytown Corp. (Old Machine)	Dick Tracy Co. (New Machine)
Machine cost	$290	$270
Accumulated depreciation	140	–0–
Fair value	85	425

Instructions

For each company, prepare the necessary journal entry to record the exchange. (The exchange has commercial substance.)

E9.19 (LO 3) (Nonmonetary Exchange) Cannondale Company purchased an electric wax melter on April 30, 2020, by trading in its old gas model and paying the balance in cash. The following data relate to the purchase.

List price of new melter	$15,800
Cash paid	10,000
Cost of old melter (5-year life, $700 salvage value)	11,200
Accumulated depreciation—old melter (straight-line)	6,300
Secondhand fair value of old melter	5,200

Instructions

Prepare the journal entry (entries) necessary to record this exchange, assuming that the exchange **(a)** has commercial substance, and **(b)** lacks commercial substance. Cannondale's fiscal year ends on December 31, and depreciation has been recorded through December 31, 2024.

E9.20 (LO 3) (Nonmonetary Exchange) Arruza Company exchanged equipment used in its manufacturing operations plus $3,000 in cash for similar equipment used in the operations of LoBianco Company. The following information pertains to the exchange.

	Arruza Co.	LoBianco Co.
Equipment (cost)	$28,000	$28,000
Accumulated depreciation	19,000	10,000
Fair value of equipment	12,500	15,500
Cash given up	3,000	

Instructions

a. Prepare the journal entries to record the exchange on the books of both companies. Assume that the exchange lacks commercial substance.

b. Prepare the journal entries to record the exchange on the books of both companies. Assume that the exchange has commercial substance.

E9.21 (LO 3) (Nonmonetary Exchange) Ashbrook Inc. has negotiated the purchase of a new piece of automatic equipment at a price of $8,000 plus trade-in, f.o.b. factory. Ashbrook Inc. paid $8,000 cash and traded in used equipment. The used equipment had originally cost $62,000; it had a book value of $42,000 and a secondhand fair value of $47,800, as indicated by recent transactions involving similar equipment. Freight and installation charges for the new equipment required a cash payment of $1,100.

Instructions

a. Prepare the general journal entry to record this transaction, assuming that the exchange has commercial substance.

b. Assuming the same facts as in (a) except that fair value information for the assets exchanged is not determinable, prepare the general journal entry to record this transaction.

E9.22 (LO 4) Groupwork (Analysis of Subsequent Expenditures) Donovan Resources Group has been in its plant facility for 15 years. Although the plant is quite functional, numerous repair costs are incurred to maintain it in sound working order. The company's plant asset book value is currently $800,000, as indicated below.

Original cost	$1,200,000
Accumulated depreciation	400,000
Book value	$ 800,000

During the current year, the following expenditures were made to the plant facility.

a. Because of increased demands for its product, the company increased its plant capacity by building a new addition at a cost of $270,000.

b. The entire plant was repainted at a cost of $23,000.

c. The roof was an asbestos cement slate. For safety purposes, it was removed and replaced with a wood shingle roof at a cost of $61,000. Book value of the old roof was $41,000.

d. The electrical system was completely updated at a cost of $22,000. The cost of the old electrical system was not known. It is estimated that the useful life of the building will not change as a result of this updating.

e. A series of major repairs were made at a cost of $47,000, because parts of the wood structure were rotting. The cost of the old wood structure was not known. These extensive repairs are estimated to increase the useful life of the building.

Instructions

Indicate how each of these transactions would be recorded in the accounting records.

E9.23 (LO 4, 5) (Analysis of Subsequent Expenditures) The following transactions occurred during 2025. Assume that depreciation of 10% per year is charged on all machinery and 5% per year on buildings, on a straight-line basis, with no estimated salvage value. Depreciation is charged for a full year on all fixed assets acquired during the year, and no depreciation is charged on fixed assets disposed of during the year.

Jan. 30 A building that cost $132,000 in 2008 is torn down to make room for a new building. The wrecking contractor was paid $5,100 and was permitted to keep all materials salvaged.

Mar. 10 Machinery that was purchased in 2018 for $16,000 is sold for $2,900 cash, f.o.b. purchaser's plant. Freight of $300 is paid on the sale of this machinery.

Mar. 20 A gear breaks on a machine that cost $9,000 in 2017. The gear is replaced at a cost of $2,000. The replacement does not extend the useful life of the machine but does make the machine more efficient.

May 18 A special base installed for a machine in 2019 when the machine was purchased has to be replaced at a cost of $5,500 because of defective workmanship on the original base. The cost of the machinery was $14,200 in 2019. The cost of the base was $3,500, and this amount was charged to the Machinery account in 2019.

June 23 One of the buildings is repainted at a cost of $6,900. It had not been painted since it was constructed in 2021.

Instructions

Prepare general journal entries for the transactions. (Round to the nearest dollar.)

E9.24 (LO 4) (Analysis of Subsequent Expenditures) Plant assets often require expenditures subsequent to acquisition. It is important that they be accounted for properly. Any errors will affect both the balance sheets and income statements for a number of years.

Instructions

For each of the following items, indicate whether the expenditure should be capitalized (C) or expensed (E) in the period incurred.

a. _____ Improvement.

b. _____ Replacement of a minor broken part on a machine.

c. _____ Expenditure that increases the useful life of an existing asset.

d. _____ Expenditure that increases the efficiency and effectiveness of a productive asset but does not increase its salvage value.

e. _____ Expenditure that increases the efficiency and effectiveness of a productive asset and increases the asset's salvage value.

f. _____ Expenditure that increases the quality of the output of the productive asset.

g. _____ Improvement to a machine that increased its fair market value and its production capacity by 30% without extending the machine's useful life.

h. _____ Ordinary repairs.

E9.25 (LO 5, 6) (Entries for Disposition of Assets) On December 31, 2025, Tritt Inc. has a machine with a book value of $940,000. The original cost and related accumulated depreciation at this date are as follows.

Machine	$1,300,000
Less: Accumulated depreciation	360,000
Book value	$ 940,000

Depreciation is computed at $60,000 per year on a straight-line basis.

Instructions

Presented below is a set of independent situations. For each independent situation, indicate the journal entry to be made to record the transaction. Make sure that depreciation entries are made to update the book value of the machine prior to its disposal.

a. A fire completely destroys the machine on August 31, 2026. An insurance settlement of $430,000 was received for this casualty. Assume the settlement was received immediately.

b. On April 1, 2026, Tritt sold the machine for $1,040,000 to Yoakam Company.

***c.** On July 31, 2026, the company donated this machine to the Mountain King City Council. The fair value of the machine at the time of the donation was estimated to be $1,100,000.

E9.26 (LO 5) (Disposition of Assets) On April 1, 2025, Estefan Company received a condemnation award of $430,000 cash as compensation for the forced sale of the company's land and building, which stood in the path of a new state highway. The land and building cost $60,000 and $280,000, respectively, when they were acquired. At April 1, 2025, the accumulated depreciation relating to the building amounted to $160,000. On August 1, 2025, Estafan purchased a piece of replacement property for cash. The new land cost $90,000, and the new building cost $400,000.

Instructions

Prepare the journal entries to record the transactions on April 1 and August 1, 2025.

Problems

P9.1 (LO 1) Excel (Classification of Acquisition and Other Asset Costs) At December 31, 2024, certain accounts included in the property, plant, and equipment section of Reagan Company's balance sheet had the following balances.

Land	$230,000
Buildings	890,000
Leasehold improvements	660,000
Equipment	875,000

During 2025, the following transactions occurred.

1. Land site number 621 was acquired for $850,000. In addition, to acquire the land Reagan paid a $51,000 commission to a real estate agent. Costs of $35,000 were incurred to clear the land. During the course of clearing the land, timber and gravel were recovered and sold for $13,000.
2. A second tract of land (site number 622) with a building was acquired for $420,000. The closing statement indicated that the land value was $300,000 and the building value was $120,000. Shortly after acquisition, the building was demolished at a cost of $41,000. A new building was constructed for $330,000 plus the following costs.

Excavation fees	$38,000
Architectural design fees	11,000
Building permit fee	2,500
Imputed interest on funds obtained from stock financing used during construction	8,500

   The building was completed and occupied on September 30, 2025.
3. A third tract of land (site number 623) was acquired for $650,000 and was put on the market for resale.
4. During December 2025, costs of $89,000 were incurred to improve leased office space. The related lease will terminate on December 31, 2027, and is not expected to be renewed. (*Hint:* Leasehold improvements should be handled in the same manner as land improvements.)
5. A group of new machines was purchased under a royalty agreement that provides for payment of royalties based on units of production for the machines. The invoice price of the machines was $87,000, freight costs were $3,300, installation costs were $2,400, and royalty payments for 2025 were $17,500.

Instructions

a. Prepare a detailed analysis of the changes in each of the following balance sheet accounts for 2025.

Land	Leasehold Improvements
Buildings	Equipment

Disregard the related accumulated depreciation accounts.

b. List the items in the situation that were not used to determine the answer to (a) above, and indicate where, or if, these items should be included in Reagan's financial statements.

(AICPA adapted)

P9.2 (LO 1) (Asset Retirement Obligation) During 2024, YellowCard constructed a small manufacturing facility specifically to manufacture one particular accessory. YellowCard paid the construction contractor $5,000,000 cash (which was the total contract price) and placed the facility into service on January 1, 2025. Because of technological change, YellowCard anticipates that the manufacturing facility will be useful for no more than 10 years. The local government where the facility is located required that, at the end of the 10-year period, YellowCard remediate the facility so that it can be used as a community center. YellowCard estimates the cost of remediation will be $500,000.

YellowCard uses straight-line depreciation with $0 salvage value for its plant asset and a 10% discount rate for asset retirement obligations.

Instructions

a. Prepare the journal entries to record the January 1, 2025, transactions

b. Prepare adjusting entries to record depreciation and interest expense on December 31, 2025.

P9.3 (LO 1, 5) (Classification of Acquisition Costs) Selected accounts included in the property, plant, and equipment section of Lobo Corporation's balance sheet at December 31, 2024, had the following balances.

Land	$ 300,000
Land improvements	140,000
Buildings	1,100,000
Equipment	960,000

During 2025, the following transactions occurred.

1. A tract of land was acquired for $150,000 as a potential future building site.
2. A plant facility consisting of land and building was acquired from Mendota Company in exchange for 20,000 shares of Lobo's common stock. On the acquisition date, Lobo's stock had a closing market price of $37 per share on a national stock exchange. The plant facility was carried on Mendota's books at $110,000 for land and $320,000 for the building at the exchange date. Current appraised values for the land and building, respectively, are $230,000 and $690,000.
3. Items of machinery and equipment were purchased at a total cost of $400,000. Additional costs were incurred as follows.

Freight and unloading	$13,000
Sales taxes	20,000
Installation	26,000

4. Expenditures totaling $95,000 were made for new parking lots, streets, and sidewalks at the corporation's various plant locations. These expenditures had an estimated useful life of 15 years.
5. A machine costing $80,000 on January 1, 2017, was scrapped on June 30, 2025. Double-declining-balance depreciation has been recorded on the basis of a 10-year life.
6. A machine was sold for $20,000 on July 1, 2025. Original cost of the machine was $44,000 on January 1, 2022, and it was depreciated on the straight-line basis over an estimated useful life of 7 years and a salvage value of $2,000.

Instructions

(Round to the nearest dollar.)

a. Prepare a detailed analysis of the changes in each of the following balance sheet accounts for 2025.

Land	Buildings
Land Improvements	Equipment

(*Hint:* Disregard the related accumulated depreciation accounts.)

b. List the items in the fact situation that were not used to determine the answer to (a), showing the pertinent amounts and supporting computations in good form for each item. In addition, indicate where, or if, these items should be included in Lobo's financial statements.

(AICPA adapted)

P9.4 (LO 1, 3) (Classification of Land and Building Costs) Spitfire Company was incorporated on January 2, 2025, but was unable to begin manufacturing activities until July 1, 2025, because new factory facilities were not completed until that date.

The Land and Buildings account reported the following items during 2025.

January 31	Land and buildings	$160,000
February 28	Cost of removal of building	9,800
May 1	Partial payment of new construction	60,000
May 1	Legal fees paid	3,770
June 1	Second payment on new construction	40,000
June 1	Insurance premium	2,280
June 1	Special tax assessment	4,000
June 30	General expenses	36,300
July 1	Final payment on new construction	30,000
December 31	Asset write-up	53,800
		399,950
December 31	Depreciation—2025 at 1%	(4,000)
December 31, 2025	Account balance	$395,950

The following additional information is to be considered.

1. To acquire land and building, the company paid $80,000 cash and 800 shares of its 8% cumulative preferred stock, par value $100 per share. Fair value of the stock is $117 per share.
2. Cost of removal of old buildings amounted to $9,800, and the demolition company retained all materials of the building.
3. Legal fees covered the following.

Cost of organization	$ 610
Examination of title covering purchase of land	1,300
Legal work in connection with construction contract	1,860
	$3,770

4. Insurance premium covered the building for a 2-year term beginning May 1, 2025.
5. The special tax assessment covered street improvements that are permanent in nature.
6. General expenses covered the following for the period from January 2, 2025, to June 30, 2025.

President's salary	$32,100
Plant superintendent's salary—supervision of new building	4,200
	$36,300

7. Because of a general increase in construction costs after entering into the building contract, the board of directors increased the value of the building $53,800, believing that such an increase was justified to reflect the current market at the time the building was completed. Retained earnings was credited for this amount.
8. Estimated life of building—50 years.

   Depreciation for 2025—1% of asset value (1% of $400,000, or $4,000).

Instructions

a. Prepare entries to reflect correct land, buildings, and depreciation accounts at December 31, 2025.

b. Show the proper presentation of land, buildings, and depreciation on the balance sheet at December 31, 2025.

(AICPA adapted)

P9.5 (LO 1, 3, 5, 6) Groupwork (Dispositions, Including Condemnation, Demolition, and Trade-In) Presented below is a schedule of property dispositions for Hollerith Co.

Schedule of Property Dispositions

	Cost	Accumulated Depreciation	Cash Proceeds	Fair Value	Nature of Disposition
Land	$40,000	—	$31,000	$31,000	Condemnation
Building	15,000	—	3,600	—	Demolition
Warehouse	70,000	$16,000	74,000	74,000	Destruction by fire
Machine	8,000	2,800	900	7,200	Trade-in
Furniture	10,000	7,850	—	3,100	Contribution
Automobile	9,000	3,460	2,960	2,960	Sale

The following additional information is available.

Land: On February 15, a condemnation award was received as consideration for unimproved land held primarily as an investment, and on March 31, another parcel of unimproved land to be held as an investment was purchased at a cost of $35,000.

Building: On April 2, land and building were purchased at a total cost of $75,000, of which 20% was allocated to the building on the corporate books. The real estate was acquired with the intention of demolishing the building, and this was accomplished during the month of November. Cash proceeds received in November represent the net proceeds from demolition of the building.

Warehouse: On June 30, the warehouse was destroyed by fire. The warehouse was purchased January 2, 2017, and had depreciated $16,000. On December 27, the insurance proceeds and other funds were used to purchase a replacement warehouse at a cost of $90,000.

Machine: On December 26, the machine was exchanged for another machine having a fair value of $6,300 and cash of $900 was received. (The exchange lacks commercial substance.)

*__Furniture:__ On August 15, furniture was contributed to a qualified charitable organization. No other contributions were made or pledged during the year.

Automobile: On November 3, the automobile was sold to Jared Winger, a stockholder.

Instructions

Indicate how these items would be reported on the income statement of Hollerith Co.

(AICPA adapted)

P9.6 (LO 1, 2) Excel (Classification of Costs and Interest Capitalization) On January 1, 2025, Blair Corporation purchased for $500,000 a tract of land (site number 101) with a building. Blair paid a real estate broker's commission of $36,000, legal fees of $6,000, and title guarantee insurance of $18,000. The closing statement indicated that the land value was $500,000 and the building value was $100,000. Shortly after acquisition, the building was razed at a cost of $54,000.

Blair entered into a $3,000,000 fixed-price contract with Slatkin Builders, Inc. on March 1, 2025, for the construction of an office building on land site number 101. The building was completed and occupied on September 30, 2026. Additional construction costs were incurred as follows.

Plans, specifications, and blueprints	$21,000
Architects' fees for design and supervision	82,000

The building is estimated to have a 40-year life from date of completion and will be depreciated using the 150% declining-balance method.

To finance construction costs, Blair borrowed $3,000,000 on March 1, 2025. The loan is payable in 10 annual installments of $300,000 starting on March 1, 2026, plus interest at the rate of 10%. Blair's weighted-average amounts of accumulated building construction expenditures were as follows.

For the period March 1 to December 31, 2025	$1,300,000
For the period January 1 to September 30, 2026	1,900,000

Instructions

a. Prepare a schedule that discloses the individual costs making up the balance in the land account in respect of land site number 101 as of September 30, 2026.

b. Prepare a schedule that discloses the individual costs that should be capitalized in the office building account as of September 30, 2026. Show supporting computations in good form.

(AICPA adapted)

P9.7 (LO 1, 2) (Interest During Construction) Grieg Landscaping began construction of a new plant on December 1, 2025. On this date, the company purchased a parcel of land for $139,000 in cash. In addition, it paid $2,000 in surveying costs and $4,000 for a title insurance policy. An old dwelling on the premises was demolished at a cost of $3,000, with $1,000 being received from the sale of materials.

Architectural plans were also formalized on December 1, 2025, when the architect was paid $30,000. The necessary building permits costing $3,000 were obtained from the city and paid for on December 1 as well. The excavation work began during the first week in December with payments made to the contractor in 2026 as follows.

Date of Payment	Amount of Payment
March 1	$240,000
May 1	330,000
July 1	60,000

The building was completed on July 1, 2026.

To finance construction of this plant, Grieg borrowed $600,000 from the bank on December 1, 2025. Grieg had no other borrowings. The $600,000 was a 10-year loan bearing interest at 8%.

Instructions

Compute the balance in each of the following accounts at December 31, 2025, and December 31, 2026. (Round amounts to the nearest dollar.)

a. Land.

b. Buildings.

c. Interest Expense.

P9.8 (LO 2) Groupwork (Capitalization of Interest) Laserwords Inc. is a book distributor that had been operating in its original facility since 1995. The increase in certification programs and continuing education requirements in several professions has contributed to an annual growth rate of 15% for Laserwords since 2020. Laserwords' original facility became obsolete by early 2025 because of the increased sales volume and the fact that Laserwords now carries DVDs in addition to books.

On June 1, 2025, Laserwords contracted with Black Construction to have a new building constructed for $4,000,000 on land owned by Laserwords. The payments made by Laserwords to Black Construction are shown in the schedule below.

Date	Amount
July 30, 2025	$ 900,000
January 30, 2026	1,500,000
May 30, 2026	1,600,000
Total payments	$4,000,000

Construction was completed and the building was ready for occupancy on May 27, 2026. Laserwords had no new borrowings directly associated with the new building but had the following debt outstanding at May 31, 2026, the end of its fiscal year.

10%, 5-year note payable of $2,000,000, dated April 1, 2022, with interest payable annually on April 1.

12%, 10-year bond issue of $3,000,000 sold at par on June 30, 2018, with interest payable annually on June 30.

The new building qualifies for interest capitalization. The effect of capitalizing the interest on the new building, compared with the effect of expensing the interest, is material.

Instructions

a. Compute the weighted-average accumulated expenditures on Laserwords' new building during the capitalization period.

b. Compute the avoidable interest on Laserwords' new building. (Round to one decimal place.)

c. Some interest cost of Laserwords Inc. is capitalized for the year ended May 31, 2026.

1. Identify the items relating to interest costs that must be disclosed in Laserwords' financial statements.

2. Compute the amount of each of the items that must be disclosed.

(CMA adapted)

P9.9 (LO 3) (Nonmonetary Exchanges) Holyfield Corporation wishes to exchange a machine used in its operations. Holyfield has received the following offers from other companies in the industry.

1. Dorsett Company offered to exchange a similar machine plus $23,000. (The exchange has commercial substance for both parties.)

2. Winston Company offered to exchange a similar machine. (The exchange lacks commercial substance for both parties.)

3. Liston Company offered to exchange a similar machine, but wanted $3,000 in addition to Holyfield's machine. (The exchange has commercial substance for both parties.)

In addition, Holyfield contacted Greeley Corporation, a dealer in machines. To obtain a new machine, Holyfield must pay $93,000 in addition to trading in its old machine.

	Holyfield	Dorsett	Winston	Liston	Greeley
Machine cost	$160,000	$120,000	$152,000	$160,000	$130,000
Accumulated depreciation	60,000	45,000	71,000	75,000	–0–
Fair value	92,000	69,000	92,000	95,000	185,000

Instructions

For each of the four independent situations, prepare the journal entries to record the exchange on the books of each company.

P9.10 (LO 3) (Nonmonetary Exchanges) On August 1, Hyde, Inc. exchanged productive assets with Wiggins, Inc. Hyde's asset is referred to below as "Asset A," and Wiggins' is referred to as "Asset B." The following facts pertain to these assets.

	Asset A	Asset B
Original cost	$96,000	$110,000
Accumulated depreciation (to date of exchange)	40,000	47,000
Fair value at date of exchange	60,000	75,000
Cash paid by Hyde, Inc.	15,000	
Cash received by Wiggins, Inc.		15,000

Instructions

a. Assuming that the exchange of Assets A and B has commercial substance, record the exchange for both Hyde, Inc. and Wiggins, Inc. in accordance with generally accepted accounting principles.

b. Assuming that the exchange of Assets A and B lacks commercial substance, record the exchange for both Hyde, Inc. and Wiggins, Inc. in accordance with generally accepted accounting principles.

P9.11 (LO 3) (Nonmonetary Exchanges) During the current year, Marshall Construction trades an old crane that has a book value of $90,000 (original cost $140,000 less accumulated depreciation $50,000) for a new crane from Brigham Manufacturing Co. The new crane cost Brigham $165,000 to manufacture and is classified as inventory. The following information is also available.

	Marshall Const.	Brigham Mfg. Co.
Fair value of old crane	$ 82,000	
Fair value of new crane		$200,000
Cash paid	118,000	
Cash received		118,000

Instructions

a. Assuming that this exchange is considered to have commercial substance, prepare the journal entries on the books of (1) Marshall Construction and (2) Brigham Manufacturing.

b. Assuming that this exchange lacks commercial substance for Marshall, prepare the journal entries on the books of Marshall Construction.

c. Assuming the same facts as those in (a), except that the fair value of the old crane is $98,000 and the cash paid is $102,000, prepare the journal entries on the books of (1) Marshall Construction and (2) Brigham Manufacturing.

d. Assuming the same facts as those in (b), except that the fair value of the old crane is $97,000 and the cash paid $103,000, prepare the journal entries on the books of (1) Marshall Construction and (2) Brigham Manufacturing.

P9.12 (LO 1, 3) (Purchases by Deferred Payment, Lump-Sum, and Nonmonetary Exchanges) Klamath Company, a manufacturer of ballet shoes, is experiencing a period of sustained growth. In an effort to expand its production capacity to meet the increased demand for its product, the company recently made several acquisitions of plant and equipment. Rob Joffrey, newly hired in the position of fixed-asset accountant, requested that Danny Nolte, Klamath's controller, review the following transactions.

Transaction 1: On June 1, 2025, Klamath Company purchased equipment from Wyandot Corporation. Klamath issued a $28,000, 4-year, zero-interest-bearing note to Wyandot for the new equipment. Klamath will pay off the note in four equal installments due at the end of each of the next 4 years. At the date of the transaction, the prevailing market rate of interest for obligations of this nature was 10%. Freight costs of $425 and installation costs of $500 were incurred in completing this transaction. The appropriate factors for the time value of money at a 10% rate of interest are given below.

Future value of $1 for 4 periods	1.46
Future value of an ordinary annuity for 4 periods	4.64
Present value of $1 for 4 periods	0.68
Present value of an ordinary annuity for 4 periods	3.17

Transaction 2: On December 1, 2025, Klamath Company purchased several assets of Yakima Shoes Inc., a small shoe manufacturer whose owner was retiring. The purchase amounted to $220,000 and included the assets listed below. Klamath Company engaged the services of Tennyson Appraisal Inc., an independent appraiser, to determine the fair values of the assets which are also presented below.

	Yakima Book Value	Fair Value
Inventory	$ 60,000	$ 50,000
Land	40,000	80,000
Buildings	70,000	120,000
	$170,000	$250,000

During its fiscal year ended May 31, 2026, Klamath incurred $8,000 for interest expense in connection with the financing of these assets.

Transaction 3: On March 1, 2026, Klamath Company exchanged a number of used trucks plus cash for vacant land adjacent to its plant site. (The exchange has commercial substance.) Klamath intends to use the land for a parking lot. The trucks had a combined book value of $35,000, as Klamath had recorded $20,000 of accumulated depreciation against these assets. Klamath's purchasing agent, who has had previous dealings in the secondhand market, indicated that the trucks had a fair value of $46,000 at the time of the transaction. In addition to the trucks, Klamath Company paid $19,000 cash for the land.

Instructions

a. Plant assets such as land, buildings, and equipment receive special accounting treatment. Describe the major characteristics of these assets that differentiate them from other types of assets.

b. For each of the three transactions described above, determine the value at which Klamath Company should record the acquired assets. Support your calculations with an explanation of the underlying rationale.

c. The books of Klamath Company show the following additional transactions for the fiscal year ended May 31, 2026.

1. Acquisition of a building for speculative purposes.

2. Purchase of a 2-year insurance policy covering plant equipment.

3. Purchase of the rights for the exclusive use of a process used in the manufacture of ballet shoes.

For each of these transactions, indicate whether the asset should be classified as a plant asset. If it is a plant asset, explain why it is. If it is not a plant asset, explain why not, and identify the proper classification.

(CMA adapted)

Using Your Judgment

Financial Statement Analysis Case: Johnson & Johnson

UYJ 9.1 Johnson & Johnson, the world's leading and most diversified healthcare corporation, serves its customers through specialized worldwide franchises. Each of its franchises consists of a number of companies throughout the world that focus on a particular healthcare market, such as surgical sutures, consumer pharmaceuticals, or contact lenses. Information related to its property, plant, and equipment in a recent annual report is shown in the following notes to the financial statements.

1. Property, Plant and Equipment and Depreciation

Property, plant and equipment are stated at cost. The Company utilizes the straight-line method of depreciation over the estimated useful lives of the assets:

Building and building equipment	20–30 years
Land and leasehold improvements	10–20 years
Machinery and equipment	2–13 years

2. Property, Plant and Equipment

At the end of the current and prior years, property, plant and equipment at cost and accumulated depreciation were:

(dollars in millions)	Current Year	Prior Year
Land and land improvements	$ 829	$ 753
Buildings and building equipment	11,240	10,112
Machinery and equipment	25,949	23,554
Construction in progress	3,448	3,354
	41,466	37,773
Less: accumulated depreciation	24,461	21,861
	$17,005	$15,912

The Company capitalizes interest expense as part of the cost of construction of facilities and equipment. Interest expense capitalized in the current and prior two years was $94 million, $102 million and $102 million, respectively. Depreciation expense, including the amortization of capitalized interest in the current and prior two years was $2.6 billion, $2.5 billion and $2.5 billion, respectively.

Johnson & Johnson provided the following selected information in its cash flow statement.

Johnson & Johnson Consolidated Financial Statements (excerpts)	
Net cash flows from operating activities	$21,056
Cash flows from investing activities	
Additions to property, plant and equipment	(3,279)
Proceeds from the disposal of assets	1,832
Acquisitions, net of cash acquired	(35,151)
Purchases of investments	(6,153)
Sales of investments	28,117
Other (primarily intangibles)	(234)
Net cash used by investing activities	(14,868)
Cash flows from financing activities	
Dividends to shareholders	(8,943)
Repurchase of common stock	(6,358)
Proceeds from short-term debt	869
Retirement of short-term debt	(1,330)
Proceeds from long-term debt	8,992
Retirement of long-term debt	(1,777)
Proceeds from the exercise of stock options/excess tax benefits	1,062
Other	(188)
Net cash used by financing activities	(7,673)
Effect of exchange rate changes on cash and cash equivalents	337
Increase in cash and cash equivalents	(1,148)
Cash and cash equivalents, beginning of year (Note 1)	18,972
Cash and cash equivalents, end of year (Note 1)	$17,824
Supplemental cash flow data	
Cash paid during the year for:	
Interest	$ 960
Interest, net amount capitalized	866
Income taxes	3,312

Instructions

a. What was the cost of buildings and building equipment at the end of the current year?

b. Does Johnson & Johnson use a conservative or liberal method to depreciate its property, plant, and equipment?

c. What was the actual interest paid by the company in the current year?

d. What is Johnson & Johnson's free cash flow? From the information provided, comment on Johnson & Johnson's financial flexibility.

Accounting, Analysis, and Principles

UYJ9.2 Durler Company purchased equipment on January 2, 2021, for $112,000. The equipment had an estimated useful life of 5 years with an estimated salvage value of $12,000. Durler uses straight-line depreciation on all assets. On January 2, 2025, Durler exchanged this equipment plus $12,000 in cash for newer equipment. The old equipment has a fair value of $50,000.

Accounting

Prepare the journal entry to record the exchange on the books of Durler Company. Assume that the exchange has commercial substance.

Analysis

How will this exchange affect comparisons of the return on asset ratio for Durler in the year of the exchange compared to prior years?

Principles

How does the concept of commercial substance affect the accounting and analysis of this exchange?

Developing Your Professional Skills

Critical-Thinking Cases

CT9.1 (LO 1, 5) Writing (Acquisition, Improvements, and Sale of Realty) Tonkawa Company purchased land for use as its corporate headquarters. A small factory that was on the land when it was purchased was torn down before construction of the office building began. Furthermore, a substantial amount of rock blasting and removal had to be done to the site before construction of the building foundation began. Because the office building was set back on the land far from the public road, Tonkawa Company had the contractor construct a paved road that led from the public road to the parking lot of the office building.

Three years after the office building was occupied, Tonkawa Company added four stories to the office building. The four stories had an estimated useful life of 5 years more than the remaining estimated useful life of the original office building.

Ten years later, the land and building were sold at an amount more than their net book value, and Tonkawa Company had a new office building constructed in another state for use as its new corporate headquarters.

Instructions

a. Which of the expenditures above should be capitalized? How should each be depreciated or amortized? Discuss the rationale for your answers.

b. How would the sale of the land and building be accounted for? Include in your answer an explanation of how to determine the net book value at the date of sale. Discuss the rationale for your answer.

CT9.2 (LO 1) (Accounting for Self-Constructed Assets) Troopers Medical Labs, Inc., began operations 5 years ago producing stetrics, a new type of instrument it hoped to sell to doctors, dentists, and hospitals. The demand for stetrics far exceeded initial expectations, and the company was unable to produce enough stetrics to meet demand.

The company was manufacturing its product on equipment that it built at the start of its operations. To meet demand, more efficient equipment was needed. The company decided to design and build the equipment, because the equipment currently available on the market was unsuitable for producing stetrics.

In 2025, a section of the plant was devoted to development of the new equipment and a special staff was hired. Within 6 months, a machine developed at a cost of $714,000 increased production dramatically and reduced labor costs substantially. Elated by the success of the new machine, the company built three more machines of the same type at a cost of $441,000 each.

Instructions

a. In general, what costs should be capitalized for self-constructed equipment?

b. Discuss the propriety of including in the capitalized cost of self-constructed assets:

1. The increase in overhead caused by the self-construction of fixed assets.

2. A proportionate share of overhead on the same basis as that applied to goods manufactured for sale.

c. Discuss the proper accounting treatment of the $273,000 ($714,000 − $441,000) by which the cost of the first machine exceeded the cost of the subsequent machines. This additional cost should not be considered research and development costs.

CT9.3 (LO 2) Writing (Capitalization of Interest) Vania Magazines started construction of a warehouse building for its own use at an estimated cost of $5,000,000 on January 1, 2019, and completed

the building on December 31, 2024. During the construction period, Vania has the following debt obligations outstanding.

Construction loan—12% interest, payable semiannually, issued December 31, 2023	$2,000,000
Short-term loan—10% interest, payable monthly, and principal payable at maturity, on May 30, 2025	1,400,000
Long-term loan—11% interest, payable on January 1 of each year; principal payable on January 1, 2027	1,000,000

Total cost amounted to $5,200,000, and the weighted-average accumulated expenditures was $3,500,000.

Jane Esplanade, the president of the company, has been shown the costs associated with this construction project and capitalized on the balance sheet. She is bothered by the "avoidable interest" included in the cost. She argues that, first, all the interest is unavoidable—no one lends money without expecting to be compensated for it. Second, why can't the company use all the interest on all the loans when computing this avoidable interest? Finally, why can't her company capitalize all the annual interest that accrued over the period of construction?

Instructions

(Round the weighted-average interest rate to two decimal places.)

You are the manager of accounting for the company. In a memo, explain what avoidable interest is, how you computed it (being especially careful to explain why you used the interest rates that you did), and why the company cannot capitalize all its interest for the year. Attach a schedule supporting any computations that you use.

CT9.4 (LO 3) Writing (Nonmonetary Exchanges) You have two clients that are considering trading machinery with each other. Although the machines are different from each other, you believe that an assessment of expected cash flows on the exchanged assets will indicate the exchange lacks commercial substance. Your clients would prefer that the exchange be deemed to have commercial substance, to allow them to record gains. Here are the facts:

	Client A	Client B
Original cost	$100,000	$150,000
Accumulated depreciation	40,000	80,000
Fair value	80,000	100,000
Cash received (paid)	(20,000)	20,000

Instructions

a. Record the trade-in on Client A's books assuming the exchange has commercial substance.

b. Record the trade-in on Client A's books assuming the exchange lacks commercial substance.

c. Write a memo to the controller of Company A indicating and explaining the dollar impact on current and future statements of treating the exchange as having, versus lacking, commercial substance.

d. Record the entry on Client B's books assuming the exchange has commercial substance.

e. Record the entry on Client B's books assuming the exchange lacks commercial substance.

f. Write a memo to the controller of Company B indicating and explaining the dollar impact on current and future statements of treating the exchange as having, versus lacking, commercial substance.

CT9.5 (LO 1) (Costs of Acquisition) The invoice price of a machine is $50,000. Various other costs relating to the acquisition and installation of the machine including transportation, electrical wiring, special base, and so on amount to $7,500. The machine has an estimated life of 10 years, with no salvage value at the end of that period.

The owner of the business suggests that the incidental costs of $7,500 be charged to expense immediately for the following reasons.

1. If the machine should be sold, these costs cannot be recovered in the sales price.
2. The inclusion of the $7,500 in the machinery account on the books will not necessarily result in a closer approximation of the market price of this asset over the years, because of the possibility of changing demand and supply levels.
3. Charging the $7,500 to expense immediately will reduce federal income taxes.

Instructions

Discuss each of the points raised by the owner of the business.

(AICPA adapted)

CT9.6 (LO 1) Ethics (Cost of Land vs. Building—Ethics) Tones Company purchased a warehouse in a downtown district where land values are rapidly increasing. Gerald Carter, controller, and Wilma Ankara, financial vice president, are trying to allocate the cost of the purchase between the land and the building. Noting that depreciation can be taken only on the building, Carter favors placing a very high proportion of the cost on the warehouse itself, thus reducing taxable income and income taxes. Ankara, his supervisor, argues that the allocation should recognize the increasing value of the land, regardless of the depreciation potential of the warehouse. Besides, she says, net income is negatively impacted by additional depreciation and will cause the company's stock price to go down.

Instructions

Answer the following questions.

a. What stakeholder interests are in conflict?

b. What ethical issues does Carter face?

c. How should these costs be allocated?

FASB Codification References

[1] FASB ASC 410-20-05. [Predecessor literature: "Accounting for Asset Retirement Obligations," *Statement of Financial Accounting Standards No. 143* (Norwalk, Conn.: FASB, 2001).]

[2] FASB ASC 835-20-05. [Predecessor literature: "Capitalization of Interest Cost," *Statement of Financial Accounting Standards No. 34* (Stamford, Conn.: FASB, 1979).]

[3] FASB ASC 835-20-15-4. [Predecessor literature: "Determining Materiality for Capitalization of Interest Cost," *Statement of Financial Accounting Standards No. 42* (Stamford, Conn.: FASB, 1980), par. 10.]

[4] FASB ASC 820-10-35. [Predecessor literature: "(Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006), paras. 13–18.]

[5] FASB ASC 845-10-30. [Predecessor literature: "Accounting for Nonmonetary Transactions," *Opinions of the Accounting Principles Board No. 29* (New York: AICPA, 1973), par. 18, and "Exchanges of Nonmonetary Assets, an Amendment of *APB Opinion No. 29,*" *Statement of Financial Accounting Standards No. 153* (Norwalk, Conn.: FASB, 2004).]

[6] FASB ASC 845-10-25-6. [Predecessor literature: "Interpretations of *APB Opinion No. 29*," EITF Abstracts No. 01-02 (Norwalk, Conn.: FASB, 2002).]

[7] FASB ASC 845-10-50-1. [Predecessor literature: "Accounting for Nonmonetary Transactions," *Opinions of the Accounting Principles Board No. 29* (New York: AICPA, 1973), par. 28, and "Exchanges of Nonmonetary Assets, an Amendment of *APB Opinion No. 29,*" *Statement of Financial Accounting Standards No. 153* (Norwalk, Conn.: FASB, 2004).]

[8] FASB ASC 360-10-25-5. [Predecessor literature: "Accounting for Planned Major Maintenance Activities," FASB Staff Position AUG-AIR-1 (Norwalk, Conn.: FASB, September 2006), par. 5.]

[9] FASB ASC 605-40-25-2. [Predecessor literature: "Accounting for Involuntary Conversions of Nonmonetary Assets to Monetary Assets," *FASB Interpretation No. 30* (Stamford, Conn.: FASB, 1979), summary paragraph.]

[10] FASB ASC 958-605-15. [Predecessor literature: "Accounting for Contributions Received and Contributions Made," *Statement of Financial Accounting Standards No. 116* (Norwalk, Conn.: FASB, 1993).]

[11] FASB ASC 958-605-25-5A. [Predecessor literature: "Accounting for Contributions Received and Contributions Made," *Statement of Financial Accounting Standards No. 116* (Norwalk, Conn.: FASB, 1993).]

[12] FASB ASC 606. [Predecessor literature: None.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE9.1 Access the glossary ("Master Glossary") to answer the following.

a. What does it mean to "capitalize" an item?

b. What is the definition of a nonmonetary asset?

c. What is a nonreciprocal transfer?

d. What is the definition of "contribution"?

CE9.2 Herb Scholl, the owner of Scholl's Company, wonders whether interest costs associated with developing land can ever be capitalized. What does the Codification say on this matter?

CE9.3 What guidance does the Codification provide on the accrual of costs associated with planned major maintenance activities?

CE9.4 Briefly describe how the purchases and sales of inventory with the same counterparty are similar to the accounting for other nonmonetary exchanges.

Codification Research Case

Your client is in the planning phase for a major plant expansion, which will involve the construction of a new warehouse. The assistant controller does not believe that interest cost can be included in the cost of the warehouse, because it is a financing expense. Others on the planning team believe that some interest cost can be included in the cost of the warehouse, but no one could identify the specific authoritative guidance for this issue. Your supervisor asks you to research this issue.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Is it permissible to capitalize interest into the cost of assets? Provide authoritative support for your answer.

b. What are the objectives for capitalizing interest?

c. Discuss which assets qualify for interest capitalization.

d. Is there a limit to the amount of interest that may be capitalized in a period?

e. If interest capitalization is allowed, what disclosures are required?

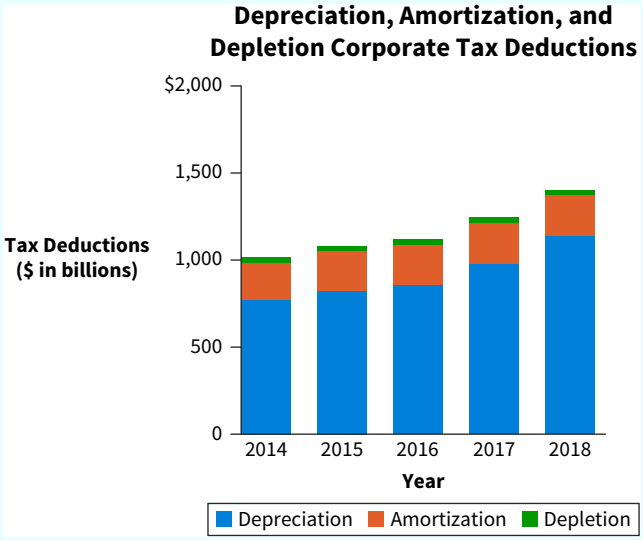
Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Analyze the Impact of Capital Investments

DA9.1 Investments in property, plant, and equipment often make up a significant portion of a company's total assets. It makes sense, then, that management and investors alike would want to understand how these investments affect the company, from potential tax savings to the income they help produce. Data visualizations such as the following can provide an effective way to quickly evaluate the impact of capital expenditures on a company's overall performance.



Required

For this exercise, you will review four different visualizations and identify which chart best shows the total dollar amount of tax deductions by category over time.

Go to Wiley Course Resources for complete details and instructions.

DA9.2 Capital investments will fluctuate over time, depending on where a company is in its life cycle. Investors can pull financial data from a company's 10-K report and evaluate that data over time and compare across different companies.

Required

Using a graph that compares net property, plant, and equipment balances for three different companies over a five-year period, you will evaluate which company is increasing its capital investment and then document your insights on the comparisons among the three companies.

Go to Wiley Course Resources for complete details and instructions.

DA9.3 Capital investments are a key component of company growth and often correlated with a focus on innovation. Successful investments will provide a return in the form of net income.

Required

For this exercise, you will review a graph that shows trends in net income relative to capital expenditures for two different companies over a five-year period. Using the visualization, you will explain the relationship between capital spending and net income for the companies and then document your insights regarding which company is more innovative.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Evaluate the Cost-Benefit of a Policy Change

DA9.4 For many companies, their detailed list of fixed assets can be quite long. From vehicles to buildings, to computers, copiers, and desks, the number of fixed assets held by a company certainly accumulates over time. However, the more assets a company holds, the greater number of potential repairs and maintenance transactions.

Companies must evaluate these expenditures to understand if they should be capitalized as part of the long-term asset or expensed as incurred. To do that, management will often establish a dollar threshold; all transactions above that threshold will be reviewed for potential capitalization. What happens, though, if management wants to consider changing that threshold amount? Using analytical tools like Excel can help companies sift through large amounts of data and evaluate all aspects of a business decision.

Required

Using a large data set of fixed asset repair expenditures over the course of a year, you will use Excel to help summarize the cost of those repairs for potential capitalization. Your analysis will evaluate the cost-benefit of increasing the dollar value threshold.

Go to Wiley Course Resources for complete details and instructions.

CHAPTER 10

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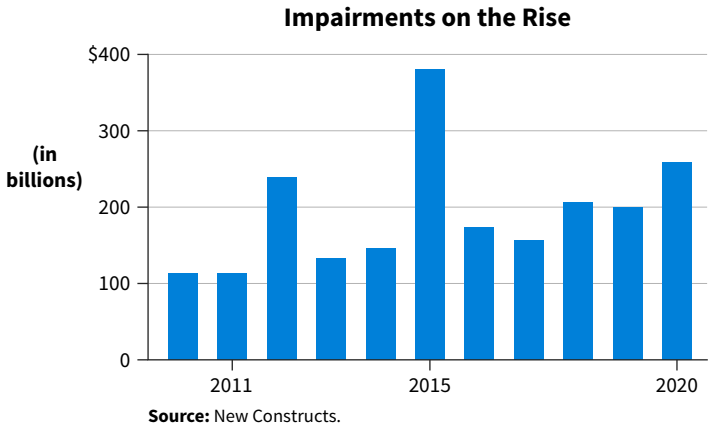
Depreciation, Impairments, and Depletion

WHAT are depreciation, impairments, and depletion?

In Chapter 9, you learned how to account for companies' significant investments in tangible long-lived assets at acquisition. What about the accounting in the periods after acquisition, as companies use these assets in their operations? Depreciation is the accounting process of allocating the historical cost of tangible assets to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset. The term impairment applies to the situation when events or changes in circumstances indicate that the company may not be able to recover the carrying amount of a long-lived asset. Mining and oil companies use the term depletion to describe the allocation of the cost of natural resources (such as gravel, oil, and coal) over periods when those assets are generating cash flows and income.

WHY is information on depreciation, impairments, and depletion important?

Investors and creditors expect that the cost of acquiring long lived assets and natural resources to be captured in the amounts reported as assets on the balance sheet and as expenses in income. That is, the periodic depreciation process results in a reduction in the carrying value of the asset on the balances sheet and an increase in depreciation expense, which reduces income.



Source: New Constructs.

When companies report impairments, they are giving investors important information about the prospects for future cash flows—a key element of the objective of financial reporting. For investors and creditors to have assurance that the amounts reported on the balance sheet for property, plant, and equipment are relevant and representationally faithful, appropriate and timely impairment charges must be reported. For example, when the economy falters, impairment losses for many companies can be substantial. The adjacent chart indicates that impairments are on the rise in the wake of the pandemic-induced economic downturn. For example, **Disney** booked a $4.95 billion charge, due to an underperformance of the international channels business that was exacerbated by the impact of Covid-19.

HOW do companies account for depreciation, impairments, and depletion?

The accounting for depreciation and depletion involves three factors: (1) determining the depreciation or depletion base, (2) estimating service (useful) lives, and (3) applying a method of cost allocation (depreciation or depletion). Common allocation methods for depreciation are activity (based on the use of the asset), straight-line, or decreasing-charge approaches. Depletion is generally a function of the number of units of natural resource withdrawn during the period. Impairment losses are recorded if events and changes in circumstances indicate a possible impairment and it is determined that the sum of the expected future net cash flows from the long-lived asset is less than the carrying amount of the asset. The impairment loss is the amount by which the carrying amount of the asset exceeds the fair value of the asset.

Source: M. Mauer, "Company Write-Downs Surge as Business Slows During Covid-19," *Wall Street Journal* (August 19, 2020).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 10.1 Describe depreciation concepts and methods of depreciation.	**10.1 Depreciation** • Factors involved • Methods of depreciation • Other depreciation issues	Examples **10.1** Depreciable Base **10.2** Activity Method Depreciation **10.3** Straight-Line Depreciation **10.4** Sum-of-the-Years'-Digits Depreciation **10.5** Double-Declining-Balance Depreciation **10.6** Composite Depreciation **10.7** Accelerated Methods Comparison **10.8** Revision in Depreciation Put It into Practice LO 10.1 Apply Depreciation Methods
LO 10.2 Identify the accounting issues related to asset impairment.	**10.2 Impairments** • Measuring impairments • Restoration of loss • Assets to be disposed of	Examples **10.9** Impairment—Example 1 **10.10** Impairment—Example 2 **10.11** Restoration of Impairment Loss Put It into Practice LO 10.2 Account for Impairments
LO 10.3 Explain the accounting procedures for depletion of natural resources.	**10.3 Depletion** • Establishing a base • Cost allocation • Estimating reserves • Liquidating dividends • Continuing controversy	Examples **10.12** Depletion Cost per Unit **10.13** Liquidating Dividend Put It into Practice LO 10.3 Account for Depletion
LO 10.4 Demonstrate how to report and analyze property, plant, equipment, and natural resources.	**10.4 Presentation and Decision Analysis** • Presentation • Decision analysis	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

10.1 Depreciation—A Method of Cost Allocation

LEARNING OBJECTIVE 1

Describe depreciation concepts and methods of depreciation.

You will probably purchase a used or new car in your lifetime. One common observation about this purchase is that once you buy the car and drive it off the lot, your car immediately drops in value. And as you drive the car over time, the value continues to decline because you are putting more mileage on it. In both cases, people generally say the car **depreciates** in value over time. Why does it lose value? Because over time, normal wear and tear occurs—parts get old and need to be replaced, scratches or dents happen, and the interior becomes stained or worn.

For accounting purposes, however, depreciation refers to cost allocation of an asset and not to valuation of an asset. Depreciation is therefore the process of allocating the cost of tangible assets to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset. For example, assume that **Costco** purchases equipment that costs $1,000,000 on January 1, 2025, and estimates that the equipment has a useful life of 10 years. Costco depreciates this equipment over a 10-year period. At the end of 2025, Costco reports the book value of the equipment as follows, assuming it has accumulated depreciation of $100,000.

Equipment	$1,000,000
Accumulated depreciation—equipment	100,000
Book value of equipment	$ 900,000

What does book value represent? It shows how much of the tangible assets cost (in this case, Costco's equipment) is left to be depreciated or expensed. For a company like Costco, book value is a computation that you need to understand because:

- Companies report book values on their balance sheets and notes to the financial statements.
- Book value is used in any calculation of gains and losses on possible disposal of the equipment, as well as sometimes used in some depreciation calculations.

It is unlikely that Costco's book value will be equal to the equipment's fair value. But why would Costco not use the fair value of the equipment rather than its book value? Using fair value is problematic because:

1. It would be time-consuming and costly to determine the fair value of all of Costco's equipment (or property, plant, and equipment) when preparing financial statements.
2. It may lead to management bias as valuations of equipment often will be subjective and lack verifiability. The only way to determine the fair value of equipment (or property, plant, and equipment) is to sell these types of assets to a willing buyer.

Therefore, accounting standards allow companies to follow a cost allocation process rather than trying to determine the fair value of property, plant, and equipment. Other types of assets are also subject to the cost allocation process. Different terminology is used, depending on the type of asset involved in the cost allocation:

- **Depreciation.** Cost allocation of property, plant, and equipment. Remember that land is not depreciated, but land improvements are depreciated.
- **Depletion.** Cost allocation of natural resources (such as timber, gravel, oil, and coal).
- **Amortization.** Cost allocation of intangible assets (such as patents and copyrights).

This chapter discusses depreciation and depletion, and Chapter 11 covers amortization of intangible assets. Let's begin with more detail about the depreciation process.

Factors Involved in the Depreciation Process

Before establishing a systematic pattern for depreciation expense, you must answer three basic questions:

1. What depreciable base is to be used for the asset?
2. What is the asset's useful life?
3. What method of cost allocation is best for this asset?

To answer these questions, you have to combine several estimates into one single figure. Note the use of the term **estimates**. The depreciation process is based on estimates because no one can predict with certainty how long an asset will be used or what events might happen that would impact the use of the asset.

Depreciable Base for the Asset

The base established for depreciation is a function of two factors:

1. **Original cost of the asset**. The determination of original, or historical, cost was discussed in Chapter 9.
2. **Salvage value (disposal value).** This is the estimated amount that a company will receive when it sells the asset or removes it from service. The salvage value is **not** depreciated because the company expects to receive that amount when the asset is later sold or scrapped. It is the amount to which a company writes down or depreciates the asset during its useful life.

Example 10.1
Depreciable Base

FACTS Assume that **Exact Science** has a machine that costs $10,000 and has a salvage value of $1,000.

QUESTION How would you compute the depreciable base of Exact Science's machine?

SOLUTION

The depreciable base of the machine is computed as follows.

Original cost	$10,000
Less: Salvage value	1,000
Depreciation base	$ 9,000

Exact Science would depreciate the $9,000 over the period the asset is used.

From a practical standpoint, companies often assign a zero salvage value simply because it is difficult to determine a reasonable estimate. If the salvage value is zero, then the depreciable base is the original cost of the asset.

Estimation of Service Lives

The service, or useful, life of an asset often differs from its physical life. A piece of machinery may be physically capable of producing a given product for many years beyond its service life. But a company may not use the equipment for all that time because the cost of producing the product in later years may be too high. For example, the old Slater cotton mill in Pawtucket, Rhode Island, is preserved in remarkable physical condition as an historic landmark in U.S. industrial development, although its service life was terminated many years ago.

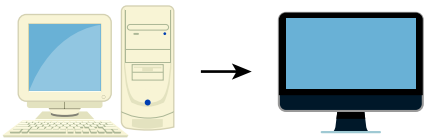
Companies retire assets for two reasons: **physical factors** (such as casualty or expiration of physical life) and **economic factors** (obsolescence). As shown in Illustration 10.1, physical and economic factors affect the service life of an asset. These factors impact company decisions about when to dispose of an asset.

ILLUSTRATION 10.1 Physical and Economic Factors of Service Life

Physical Factors

- Wear and tear, damage, and decay reduce service life.
- Maintenance is important and can sustain and extend the service life.

Economic Factors



- Technological changes in the industry cause an asset to become inadequate.
- Changing company demands cause an asset to become obsolete.

In most cases, a company estimates the service life of an asset based on its past experience with the same or similar assets. If the company does not have experience to draw upon, it should select a service life that is reasonable for the situation. For example, it would not be reasonable to depreciate a company truck over 40 years. With the amount of wear and tear put on company vehicles, it is probable the truck would be replaced much sooner than that.

Note that the service life is an estimate used for the purpose of cost allocation and determining the amount of depreciation expense recorded each accounting period. If a company determines that the service life of a machine is 10 years, does that mean the company is obligated to dispose of the machine at the end of 10 years? No, it does not. If the machine is still in good working order and has not become obsolete, the company can continue to use it. But after 10 years, there would be no more depreciation expense recognized on the machine. The cost would have been fully allocated to expense over the 10-year period and the book value would be as $0.[1]

Methods of Depreciation

Underlying Concepts

Depreciation attempts to recognize the cost of an asset in the periods that benefit from the use of that asset.

The third factor involved in the depreciation process is the **method** of cost allocation. The profession requires that the depreciation method employed be "systematic and rational" (see Underlying Concepts). Companies may use a number of depreciation methods, as follows.

1. Activity method (units of use or production).
2. Straight-line method.
3. Decreasing-charge methods (accelerated):
   a. Sum-of-the-years'-digits.
   b. Declining-balance method.
4. Group and composite methods.

To illustrate these depreciation methods, assume that Gordon Dining Services recently purchased an autonomous food delivery robot to meet increased demand. Illustration 10.2 contains the pertinent data concerning this purchase.

[1]The airline industry illustrates the type of problem involved in estimation. In the past, aircraft were assumed not to wear out—they just became obsolete. However, some jets have been in service as long as 20 years, and maintenance of these aircraft has become increasingly expensive. As a result, some airlines now replace aircraft not because of obsolescence but because of physical deterioration.

ILLUSTRATION 10.2 Data Used to Illustrate Depreciation Methods

Cost of robot	$500,000
Estimated useful life	5 years
Estimated salvage value	$50,000
Productive life in hours	30,000 hours

Activity Method

The **activity method** (also called the **variable-charge** or **units-of-production approach**) assumes that depreciation is **a function of use or productivity, instead of the passage of time**. In other words, more depreciation should be recognized the more the asset is used. A company considers the life of the asset in terms of either:

- An **output** measure, such as units it produced from equipment or miles driven on a vehicle.
- An **input** measure, such as the number of hours a machine works.

For some assets, determining the usage is difficult or not feasible. For example, what would be an input or output measure for a building? A building steadily deteriorates due to the elements (time) regardless of its use. In addition, where economic or physical factors affect an asset, independent of its use, the activity method loses much of its significance.

Example 10.2 Activity Method Depreciation

FACTS Refer to the Gordon Dining Services data in Illustration 10.2. Gordon Dining decides to use the activity method to compute its depreciation for the current year.

QUESTION If Gordon Dining Services uses the delivery bot for 4,000 hours in the first year, how would you compute its depreciation expense?

SOLUTION

The depreciation expense for Gordon Dining is computed as follows.

$$\frac{\textbf{Cost} - \textbf{Salvage Value}}{\textbf{Total Estimated Activity}} = \textbf{Depreciation Expense}$$

$$\frac{\$500{,}000 - \$50{,}000}{30{,}000 \text{ hours}} = \$15 \text{ per hour}$$

First-year depreciation expense is therefore 4,000 hours × $15 per hour = $60,000.

An advantage of the activity method is that it records expenses in the same period as the associated revenues. When companies have periods of low productivity, the related depreciation expense will be low. In periods of high productivity, depreciation expense will be higher. In this way, a plant running at just 40% of capacity generates lower depreciation charges. This will benefit a company like **International Paper** which uses the units-of-production method.

Straight-Line Method

The **straight-line method** considers depreciation as a **function of time rather than a function of usage** (see **Underlying Concepts**). Companies widely use this method because of its simplicity. The straight-line procedure is often the most conceptually appropriate, too. When creeping obsolescence is the primary reason for a limited service life, the decline in usefulness may be constant from period to period. The major objection to the straight-line method is that it rests on two assumptions:

1. The asset's economic usefulness is the same each year. In reality, the asset may not be utilized the same each year.
2. The maintenance and repair expense is essentially the same each period. In reality, as the asset gets older, it will probably have more down time as it will need more repairs to maintain its operating utility.

Underlying Concepts

If benefits flow on a "straight-line" basis, then justification exists for recording the cost of the asset on a straight-line basis.

Example 10.3 shows the calculation of straight-line depreciation for Gordon Dining Services.

Example 10.3
Straight-Line Depreciation

FACTS Refer to the Gordon Dining Services data in Illustration 10.2. Gordon Dining decides to use the straight-line method to compute its depreciation for the current year.

QUESTION If Gordon Dining Services uses the straight-line method, how would you compute its depreciation expense in the first year?

SOLUTION

The depreciation expense for Gordon Dining using the straight-line method is computed as follows.

$$\frac{\text{Cost} - \text{Salvage Value}}{\text{Estimated Service Life}} = \text{Depreciation Expense}$$

$$\frac{\$500{,}000 - \$50{,}000}{5 \text{ years}} = \$90{,}000 \text{ per year}$$

The straight-line method results in the same amount of depreciation expense recognized each year. The amount can be expressed as a percentage by dividing 1 by the useful life. In the Gordon Dining example, the straight-line rate would be 1/5, or 20%. So, 20% of the asset's depreciable base is allocated to depreciation expense each year for 5 years.

Decreasing-Charge Methods

The **decreasing-charge methods** provide for a higher depreciation expense in the earlier years and lower expense in later years (see **Underlying Concepts**). Because these methods allow for higher early-year expenses than in the straight-line method, they are often called **accelerated depreciation methods**.

What is the main justification for this approach?

- Companies should recognize more depreciation in earlier years because the asset is most productive in its earlier years.
- Accelerated methods likely provide a constant total cost because the depreciation expense is lower in the later periods, at the time when the repair and maintenance costs are often higher.

Underlying Concepts
The expense recognition principle does not justify a constant charge to income. If the benefits from the asset decline as the asset ages, then a decreasing charge to income better captures the use of the asset.

Generally, companies use one of two decreasing-charge methods: the sum-of-the-years'-digits method or the declining-balance method.

Sum-of-the-Years'-Digits The **sum-of-the-years'-digits method** results in a decreasing depreciation expense based on a decreasing fraction of the depreciable base (original cost less salvage value). Each fraction uses the sum of the years as a denominator. For example, for an asset with a 5-year useful life, the sum of the years would be $5 + 4 + 3 + 2 + 1 = 15$. The numerator is the number of years of useful life remaining as of the beginning of the year. In this method, the numerator decreases year by year, and the denominator remains constant (5/15, 4/15, 3/15, 2/15, and 1/15). At the end of the asset's useful life, the balance remaining should equal the salvage value. Example 10.4 shows this method of computation.[2]

[2]What happens if the estimated service life of the asset is 51 years? How would we calculate the sum-of-the-years'-digits? Fortunately, mathematicians have developed the following formula that permits easy computation: $\frac{n(n+1)}{2} = \frac{51(51+1)}{2} = 1{,}326$.

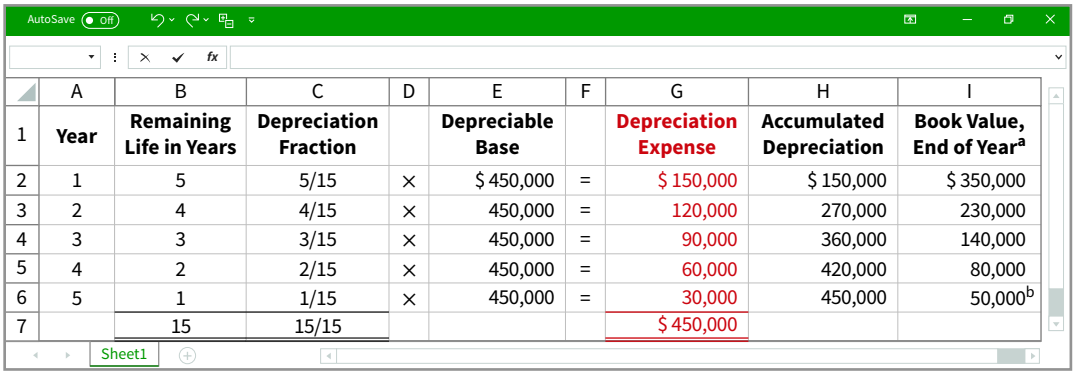
Example 10.4 Decreasing-Charge (Sum-of-the-Years'-Digits) Depreciation

FACTS Refer to the Gordon Dining Services data in Illustration 10.2. Gordon Dining decides to use the sum-of-the-years'-digits method to compute its depreciation for the current year.

QUESTION If Gordon Dining Company uses the sum-of-the-years-digits method, how would you compute its depreciation expense over the 5-year period?

SOLUTION

Gordon Dining computes depreciation using the sum-of-the-years-digits method as follows.



	A	B	C	D	E	F	G	H	I
1	**Year**	**Remaining Life in Years**	**Depreciation Fraction**		**Depreciable Base**		**Depreciation Expense**	**Accumulated Depreciation**	**Book Value, End of Year[a]**
2	1	5	5/15	×	$ 450,000	=	$ 150,000	$ 150,000	$ 350,000
3	2	4	4/15	×	450,000	=	120,000	270,000	230,000
4	3	3	3/15	×	450,000	=	90,000	360,000	140,000
5	4	2	2/15	×	450,000	=	60,000	420,000	80,000
6	5	1	1/15	×	450,000	=	30,000	450,000	50,000[b]
7		15	15/15				$ 450,000		

[a]Cost – Accumulated depreciation = Book value.
[b]Salvage value.

In Example 10.4, note that we are using a declining rate of depreciation (depreciation fraction) multiplied by the constant depreciable base. This methodology is in contrast with the declining-balance method (discussed next), where the rate of depreciation is the same but is multiplied by a declining depreciation base.

Declining-Balance Method A second decreasing-charge depreciation method—the **declining-balance method**—determines depreciation expense by applying a constant percentage to the declining **book value of the asset** each year. This method **does not deduct the salvage value** in computing depreciation expense. Here is how it works:

1 → **2** → **3**

Determine the declining-balance rate. This rate is some multiple of the straight-line rate. For example, the straight-line rate for a 10-year asset is 1/10, or 10%. A commonly used approach is the **double-declining rate,** which for that 10-year asset is then 20%, or double the straight-line rate.

Multiply the declining-balance rate by the book value of the asset each year. Recall the formula for book value (Cost − Accumulated Depreciation). Each year, as the asset is depreciated, the balance in accumulated depreciation will get larger and the book value will decline, resulting in a smaller depreciation expense each year.

Repeat Step 2 until the book value equals the salvage value. Recall that the amount of the salvage value is **not** depreciated. A general rule of thumb for the final year is instead of applying Step 2, **change the calculation to book value less salvage value**. This will give you the appropriate amount of depreciation expense so that the final book value equals salvage value.

Companies use various multiples for the declining balance method in practice, although the **double-declining-balance method** is quite common.

Example 10.5 Declining-Balance (Double-Declining-Balance) Depreciation

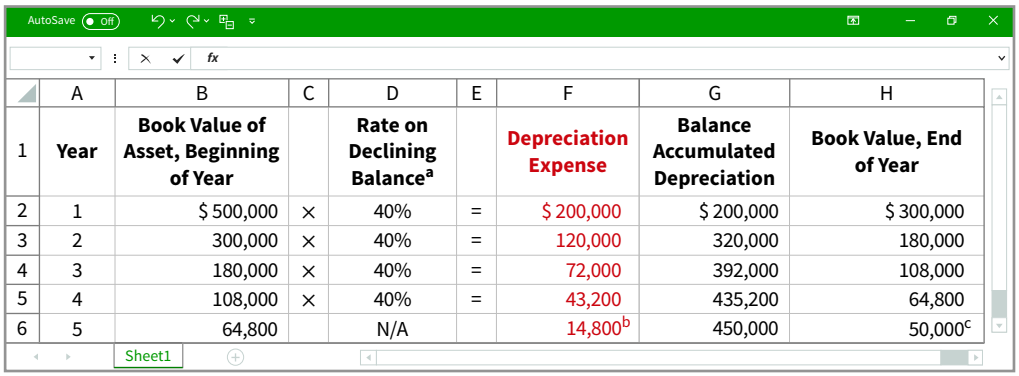
FACTS Refer to the Gordon Dining Services data in Illustration 10.2.

QUESTION If Gordon Dining Services uses the double-declining-balance method, how would you compute its depreciation expense over the 5-year period?

SOLUTION

Gordon Dining computes depreciation using the double-declining-balance method as follows.

1. Determine the double-declining-balance rate. The straight-line rate is 20% (1 ÷ 5 years). Double the straight-line rate is 40% (.20 × 2).
2. Multiply the double-declining-balance rate by the book value each year, as shown in the following table.



	A	B	C	D	E	F	G	H
1	Year	Book Value of Asset, Beginning of Year		Rate on Declining Balance[a]		Depreciation Expense	Balance Accumulated Depreciation	Book Value, End of Year
2	1	$ 500,000	×	40%	=	$ 200,000	$ 200,000	$ 300,000
3	2	300,000	×	40%	=	120,000	320,000	180,000
4	3	180,000	×	40%	=	72,000	392,000	108,000
5	4	108,000	×	40%	=	43,200	435,200	64,800
6	5	64,800		N/A		14,800[b]	450,000	50,000[c]

[a]The straight-line rate is 20% (1/5). Double the straight-line rate is .20 × 2 = 40%.

[b]Limited to $14,800 because book value should not be less than salvage value. Calculated as $64,800 − $50,000 = $14,800.

[c]The final book value should equal salvage value.

3. In the final year (Year 5), the declining-balance rate is not used because too much depreciation expense would result and cause the final book value to be less than salvage value.

Companies often switch from the declining-balance method to the straight-line method near the end of the asset's useful life to ensure that they depreciate the asset only to its salvage value.[3]

Group and Composite Methods

The previous examples have focused on depreciating an individual asset. For large companies, it may be impractical to calculate depreciation on a single-unit basis because the company has so many fixed assets. For example, **Madison Gas and Electric** might depreciate utility poles and other components of its transmission and distribution system, which are too numerous to track individually, particularly given their small value. This type of depreciation on a mass basis is referred to as the **group method** of depreciation. The group method:

- Is used when the assets are similar in nature and have approximately the same useful lives.
- Closely approximates a single-unit cost procedure because any deviation from the average amount in most cases is not that great.

[3]A pure form of the declining-balance method (sometimes appropriately called the "fixed percentage of book value method") has also been suggested as a possibility. This approach finds a rate that depreciates the asset exactly to salvage value at the end of its expected useful life. The formula for determination of this rate is $\text{Depreciation rate} = 1 - \sqrt[n]{\frac{\text{Salvage value}}{\text{Acquisition cost}}}$. The life in years is n. After computing the depreciation rate, a company applies it on the declining book value of the asset from period to period, which means that depreciation expense will be successively lower. This method is not used extensively in practice due to cumbersome computations. Further, it is not permitted for tax purposes.

A method similar to the group method is the **composite method**. In the composite method, the assets are larger in value and often contain numerous components. For example, a utility might have electric-generating stations that have various components which are difficult to track separately. The composite method is:

- Used when the assets are dissimilar and have different useful lives.
- Essentially the same as the group method—find an average and depreciate on that basis.

The computation for these methods involves finding an average (composite) depreciation rate and the average life for the group of assets. Using the composite method, a company determines an average (composite) depreciation rate by dividing the depreciation per year by the total cost of the assets.

Example 10.6
Composite Depreciation

FACTS Assume that **Alaskan Adventures** provides you with the following information for its fleet of cars, trucks, and campers.

Asset	Original Cost	Salvage Value	Depreciation Base	Estimated Life (yrs.)	Depreciation per Year (Straight-line)
Cars	$145,000	$25,000	$120,000	3	$40,000
Trucks	44,000	4,000	40,000	4	10,000
Campers	35,000	5,000	30,000	5	6,000
	$224,000	$34,000	$190,000		$56,000

QUESTIONS (a) How would you compute the average (composite) depreciation rate? (b) How would you compute the length of time it takes Alaskan Adventures to depreciate its assets, often referred to as the average (composite) life?

SOLUTION

a. Alaskan Adventures will depreciate the group of assets to their salvage value at $56,000 per year. The average (composite) depreciation rate is the depreciation per year divided by the total original cost, or 25% ($56,000 ÷ $224,000).

b. The average life identifies the time needed to depreciate this composite account. In this case, the average (composite) life is 3.39 years ($190,000 ÷ $56,000).

We can highlight the differences between the group or composite method and the single-unit depreciation method by looking at asset retirements. In Example 10.6, if **Alaskan Adventures** retires an asset before or after the average service life of the group is reached, it buries the resulting gain or loss in the Accumulated Depreciation account. This practice is justified because Alaskan Adventures will retire some assets before the average service life and others after the average life. For this reason, when an asset that had been depreciated using the group or composite method is retired, the debit to Accumulated Depreciation is the difference between original cost and cash received. Alaskan Adventures does not record a gain or loss on disposition.

To illustrate, suppose that Alaskan Adventures sold one of the campers with a cost of $5,000 for $2,600 at the end of the third year. The entry is:

Accumulated Depreciation—Equipment	2,400	
Cash	2,600	
Cars, Trucks, and Campers		5,000

If Alaskan Adventures purchases a new type of asset (mopeds, for example), it must compute a new depreciation rate and apply this rate in subsequent periods. **Illustration 10.3** presents a typical financial statement disclosure of the group depreciation method for **AT&T Inc.**

ILLUSTRATION 10.3 Disclosure of Group Depreciation Method

AT&T

Note 1: Summary of Significant Accounting Policies (partial)
Certain subsidiaries follow group depreciation methodology. Accordingly, when a portion of their depreciable property, plant and equipment is retired in the ordinary course of business, the gross book value is reclassified to accumulated depreciation, and no gain or loss is recognized on the disposition of these assets.

The group or composite method simplifies the bookkeeping process and tends to average out errors caused by over- or under-depreciation. As a result, gains or losses on disposals of assets do not distort periodic income.

On the other hand, the single-unit method (depreciation of single assets) has several advantages over the group or composite methods:

1. It simplifies the computation mathematically.
2. It identifies gains and losses on disposal.
3. It isolates depreciation on idle equipment.
4. It represents the best estimate of the depreciation of each asset, not the result of averaging the cost over a longer period of time.

As a consequence, companies generally use the unit method.[4] *Unless stated otherwise, you should use the unit method in homework problems.*

Accounting Matters — Depreciation Choices Abound

Which depreciation method should management select? If a company can reliably estimate revenues from the asset, choosing a depreciation method that matches costs with those revenues would provide the most useful information to investors. But, don't investors just remove depreciation anyways? Investors and analysts do often use a metric identified as **EBITDA** (or earnings before interest, taxes, depreciation and amortization). Some argue that EBITDA is a better metric to evaluate a company's ability to generate profits from sales alone and to make better comparisons across different companies who may use different depreciation methods.

The real estate industry faces additional challenges when considering depreciation choices, given that real estate most often increases in value over time. Some argue that an **increasing-charge** method, whereby depreciation expense would increase over time, would be more appropriate. Similar to EBITDA, the real estate industry discloses a non-GAAP metric called funds from operations (FFO) that adds depreciation and other noncash charges back to net income. In each case, consistency and full disclosure of the depreciation methods used enhance the value of financial information for users.

Source: D. Harper, "How to Assess a Real Estate Investment Trust (REIT)," *Investopedia* (April 6, 2018).

Other Depreciation Issues

We still need to discuss a couple of special issues related to depreciation:

1. How should companies compute depreciation for partial periods?
2. How should companies handle revisions in depreciation rates?

Depreciation and Partial Periods

Companies seldom purchase plant assets on the first day of a fiscal period or dispose of them on the last day of a fiscal period. A practical question is: How much depreciation should a company charge for the partial periods involved?

[4]Many believe that an even better way to depreciate property, plant, and equipment is to use **component depreciation**. Under component depreciation, a company should depreciate over its expected useful life any part or portion of property, plant, and equipment that can be separately identified as an asset. For example, a company could separate the various components of a building (e.g., roof, heating and cooling system, elevator, leasehold improvements) and depreciate each component over its useful life. In fact, IFRS requires use of component depreciation.

In computing depreciation expense for partial periods, companies must determine the depreciation expense for the full year and then prorate this depreciation expense between the two periods involved. This process should continue throughout the useful life of the asset.

Assume, for example, that Jelly Belly Candy Company purchases a large mixing machine with a 5-year life for $45,000 (no salvage value) on June 10, 2025. The company's fiscal year ends December 31. Jelly Belly therefore charges depreciation for only 6⅔ months during that year. The total depreciation for a full year (assuming straight-line depreciation) is $9,000 ($45,000 ÷ 5 years). The depreciation for the first, partial year is therefore:

$$\frac{6\frac{2}{3}}{12} \times \$9{,}000 = \$5{,}000$$

The partial-period calculation is relatively simple when Jelly Belly uses straight-line depreciation. But how is partial-period depreciation handled when it uses an accelerated method, such as sum-of-the-years'-digits or double-declining-balance?

Example 10.7 Accelerated Methods Comparison

FACTS Lynch Inc. purchases equipment with a 5-year life for $10,000 (no salvage value) on July 1, 2025. The company's fiscal year ends on December 31, 2025. Lynch decides to use either the sum-of-the-years'-digits method or the double-declining-balance method.

QUESTION How would you compute depreciation for these two methods for 2025, 2026, and 2027?

SOLUTION

Lynch computes depreciation expense using each method for the 3-year period as follows.

	Sum-of-the-Years'-Digits	Double-Declining-Balance
1st full year	(5/15 × $10,000) = $3,333.33	(.40 × $10,000) = $4,000
2nd full year	(4/15 × 10,000) = 2,666.67	(.40 × 6,000) = 2,400
3rd full year	(3/15 × 10,000) = 2,000.00	(.40 × 3,600) = 1,440

Depreciation from July 1, 2025, to December 31, 2025:

6/12 × $3,333.33 = $1,666.67	6/12 × $4,000 = $2,000

Depreciation for 2026:

6/12 × $3,333.33 = $1,666.67	6/12 × $4,000 = $2,000
6/12 × 2,666.67 = 1,333.33	6/12 × 2,400 = 1,200
$3,000.00	$3,200*
	*Or ($10,000 − $2,000) × .40

Depreciation for 2027:

6/12 × $2,666.67 = $1,333.33	6/12 × $2,400 = $1,200
6/12 × 2,000.00 = 1,000.00	6/12 × 1,440 = 720
$2,333.33	$1,920*
	*Or ($10,000 − $5,200) × .40

Sometimes a company, like Lynch in Example 10.7, modifies the process of allocating costs to a partial period to handle acquisitions and disposals of plant assets more simply.

- One variation is to take no depreciation in the year of acquisition and a full year's depreciation in the year of disposal.
- Other variations charge one-half year's depreciation both in the year of acquisition and in the year of disposal, referred to as the **half-year convention**, or charge a full year in the year of acquisition and none in the year of disposal.

In fact, Lynch may adopt any one of these fractional-year policies in allocating cost to the first and last years of an asset's life so long as it applies the method consistently. However, **unless otherwise stipulated, companies normally compute depreciation on the basis of the nearest full month**.

Illustration 10.4 shows depreciation allocated under five different fractional-year policies using the straight-line method on the $45,000 equipment purchased by Jelly Belly Candy on June 10, 2025, discussed earlier.

ILLUSTRATION 10.4 Fractional-Year Depreciation Policies

Mixer Cost = $45,000	Depreciation Allocated per Period over 5-Year Life*						
Fractional-Year Policy	2025	2026	2027	2028	2029	2030	Total Cost / Depreciation
1. Nearest fraction of a year.	$5,000[a]	$9,000	$9,000	$9,000	$9,000	$4,000[b]	$45,000
2. Nearest full month.	5,250[c]	9,000	9,000	9,000	9,000	3,750[d]	$45,000
3. Half year in period of acquisition and disposal.	4,500	9,000	9,000	9,000	9,000	4,500	$45,000
4. Full year in period of acquisition, none in period or disposal.	9,000	9,000	9,000	9,000	9,000	-0-	$45,000
5. None in period of acquisition, full year in period of disposal.	-0-	9,000	9,000	9,000	9,000	9,000	$45,000

*Rounded to nearest dollar.
[a]6.667/12 ($9,000); [b]5.333/12 ($9,000); [c]7/12 ($9.000); [d]5/12 ($9.000).

Depreciation and Replacement of Property, Plant, and Equipment

A common misconception about depreciation is that it provides funds for the replacement of fixed assets. Depreciation is like other expenses in that it reduces net income. It differs, though, in that **it does not involve a current cash outflow**. To illustrate why depreciation does not provide funds for replacement of plant assets, assume Felly Florists starts operating with plant assets of $500,000 that have a useful life of five years and no salvage value. The company's balance sheet at the beginning of the period is:

Plant assets	$500,000	Stockholders' equity	$500,000

If we assume that Felly's earns no revenue over the five years, the income statements are:

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	$ -0-	$ -0-	$ -0-	$ -0-	$ -0-
Depreciation	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
Loss	$(100,000)	$(100,000)	$(100,000)	$(100,000)	$(100,000)

Total depreciation of the plant assets over the five years is $500,000. The balance sheet at the end of the five years therefore is:

Plant assets	$0	Stockholders' equity	$0

This extreme example illustrates that depreciation **in no way** provides funds for the replacement of assets. **The funds for the replacement of the assets come from the revenues (generated through use of the asset).** Without the revenues, no income materializes, and no cash inflow results.

Revision of Depreciation Rates

When purchasing a plant asset, companies carefully determine depreciation rates based on past experience with similar assets and other pertinent information. But remember that depreciation is an estimate.

- Companies may need to revise their estimate during the life of the asset.
- Unexpected physical deterioration or unforeseen obsolescence may decrease the estimated useful life.
- Improved maintenance procedures, revision of operating procedures, or similar developments may prolong the life of the asset beyond the expected period.[5]

For example, assume that **General Motors (GM)** purchased machinery with an original cost of $90,000 on January 1, 2020. It estimates a 20-year life with no salvage value. However, on January 1, 2025, GM estimates that it will use the machine for an additional 25 years. Its total life, therefore, will be 30 years (5 years already used plus additional 25 years) instead of 20. Depreciation has been recorded at the rate of 1/20 of $90,000, or $4,500 per year by the straight-line method. On the basis of a 30-year life, GM should have recorded depreciation as 1/30 of $90,000, or $3,000 per year. It has therefore overstated depreciation, and understated net income, by $1,500 for each of the past five years, or a total amount of $7,500. **Illustration 10.5** shows this computation.

ILLUSTRATION 10.5
Computation of Accumulated Difference Due to Revisions

	Per Year	For 5 Years
Depreciation charged per books (1/20 × $90,000)	$4,500	$22,500
Depreciation based on a 30-year life (1/30 × $90,000)	(3,000)	(15,000)
Excess depreciation charged	$1,500	$ 7,500

Does GM need to go back and restate the financial statements from the past five years to adjust the depreciation? The answer is no. **No adjustments need to be made to prior periods.** Changes in estimates happen and are part of the inherent estimation process. The change is handled in the year the estimate is revised and prospectively, or going forward in future periods. GM would calculate a revised depreciation amount by using the following formula.

$$\text{Revised Depreciation Expense} = \frac{\text{Book Value} - \text{Revised Salvage Value}}{\text{Remaining Useful Life}}$$

Companies may revise both the useful life and the salvage value, so both of the revised amounts would be used in the formula.

Example 10.8 Revision in Depreciation

FACTS Use the information related to **General Motors (GM)** in the previous discussion.

QUESTIONS (a) What is the book value of GM's machinery at the time it changed the estimate of the machinery's useful life? (b) What journal entry would you make to record depreciation expense in each year following the change in estimate?

SOLUTION

a. GM's book value is as follows at the date of the change.

Machinery	$90,000
Less: Accumulated depreciation ($4,500 × 5)	22,500
Book value of machinery at January 1, 2025	$67,500

[5]As an example of a change in operating procedures, **General Motors (GM)** used to write off its tools—such as dies and equipment used to manufacture car bodies—over the life of the body type. Through this procedure, it expensed tools twice as fast as **Ford** and three times as fast as **Chrysler**. However, with changes in body types, it slowed the depreciation process on these tools and lengthened the lives on its plant and equipment. These revisions reduced depreciation and amortization charges by approximately $1.23 billion, or $2.55 per share, in the year of the change. In Chapter 21, we provide a more complete discussion of changes in estimates.

To determine revised depreciation:

$$\text{Depreciation (future periods)} = \frac{\$67{,}500 - \$0}{25 \text{ years}} = \$2{,}700$$

b. To record depreciation for each of the remaining 25 years:

Depreciation Expense	2,700	
Accumulated Depreciation—Machinery		2,700

Put It into Practice LO 10.1

Apply Depreciation Methods

FACTS Griffith Company purchased equipment for $106,000 on October 1, 2025. Griffith estimated that the equipment will have a useful life of 8 years and a salvage value of $6,000. Estimated production is 20,000 units, and estimated working hours are 10,000. During 2025, Griffith uses the equipment for 800 hours, and the equipment produces 2,000 units.

INSTRUCTIONS

a. Compute depreciation expense under each of the following methods. Griffith has a calendar-year end.

1. Straight-line method for 2025.
2. Activity method (units of output) for 2025.
3. Activity method (working hours) for 2025.
4. Sum-of-the-years'-digits method for 2027.
5. Double-declining-balance method for 2026.

b. At the beginning of 2027, Griffith determines the equipment will have a remaining useful life of 10 years, with a salvage value of zero. Assuming use of straight-line depreciation, prepare the journal entry to record depreciation expense in 2027.

SOLUTION

a. 1. Straight-line (2025): $\frac{\$106{,}000 - \$6{,}000}{8} = \$12{,}500/\text{year}$

3 months' depreciation = $3,125 ($12,500 × 3/12)

2. Output (2025): $\frac{\$106{,}000 - \$6{,}000}{20{,}000} = \$5.00/\text{output unit}$

2,000 units × $5.00 = $10,000

3. Working hours (2025): $\frac{\$106{,}000 - \$6{,}000}{10{,}000} = \$10.00/\text{hour}$

800 hours × $10.00 = $8,000

4. $(8 + 7 + 6 + 5 + 4 + 3 + 2 + 1) = 36$ **or** $\frac{n(n+1)}{2} = \frac{8(9)}{2} = 36$

			Allocated to		
Sum-of-the-Years'-Digits		**Total**	**2025**	**2026**	**2027**
Year 1	8/36 × $100,000 =	$22,222	$5,556[a]	$16,666[b]	
2	7/36 × $100,000 =	$19,444		4,861[c]	$14,583[d]
3	6/36 × $100,000 =	$16,667			4,167[e]
			$5,556	$21,527	$18,750

2027: $18,751 = (9/12 of year 2 of machine's life plus 3/12 of year 3 of machine's life)

[a]$22,222 × 3/12; [b]$22,222 × 9/12; [c]$19,444 × 3/12; [d]$19,444 × 9/12; [e]$16,667 × 3/12

5. Double-declining-balance rate: $1/8 \times 2 = 25\%$

2025: $.25 \times \$106{,}000 \times 3/12 = \$6{,}625$
Book value at end of year = $\$106{,}000 - \$6{,}625 = \$99{,}375$

2026: $.25 \times \$99{,}375 = \$24{,}844$

b. To calculate book value at the end of 2026:

Cost	$106,000
Less: Accumulated depreciation ($3,125 + $12,500)	15,625
Book value of equipment	$ 90,375

To calculate the revised depreciation expense:

$$\text{Revised Depreciation Expense} = \frac{\text{Book Value} - \text{Revised Salvage Value}}{\text{Remaining Useful Life}}$$

$$= \frac{\$90{,}375 - \$0}{10}$$

$$= \$9{,}038 \text{ per year}$$

To record depreciation expense in 2027:

Depreciation Expense	9,038	
Accumulated Depreciation—Equipment		9,038

10.2 Impairments

LEARNING OBJECTIVE 2

Identify the accounting issues related to asset impairment.

We have already discussed that determining the fair value of property, plant, and equipment can be subjective, costly, and time-consuming. That is why most property, plant, and equipment is reported on the balance sheet at its book value, or carrying amount. Note that land is reported at historical cost because land is not depreciated.

However, what if certain events happen that substantially decrease the usefulness of one or more fixed assets? Are there situations in which a company will write-down the recorded amount of property, plant, and equipment below its carrying amount and record a loss? For example, based on more consumers shopping online, **Macy's** had to decide whether to write-down the value of its store locations. Sales were declining, and only time would tell if restructuring strategies would pay off. Would Macy's be able to recover its investments in the buildings that housed its stores, along with all of the furniture and fixtures? Even if the Macy's decided to write off the value of these long-term assets, how much should be written off?

The write-off of all or part of the carrying value of property, plant, and equipment is referred to as **impairment**. Examples of events that might lead to an impairment are:

- A significant decrease in the fair value of an asset.
- A significant change in the extent or manner in which an asset is used.
- A significant adverse change in legal factors or in the business climate that affects the value of an asset.

- An accumulation of costs significantly in excess of the amount originally expected to acquire or construct an asset.
- A projection or forecast that demonstrates continuing losses associated with an asset.

These events or changes in circumstances indicate that the company may not be able to recover the carrying amount of the asset. In that case, a **recoverability test** is used to determine whether an impairment has occurred. [1] (See the FASB Codification References near the end of the chapter.)

To apply the recoverability test, a company estimates the future net cash flows expected from the **use of that asset and its eventual disposition,** and compares it to the carrying amount as follows.

- If the sum of expected future cash flows (undiscounted) is **greater than** the carrying value of the intangible asset, **there is no impairment**.
- If the sum of expected future cash flows (undiscounted) is **less than** the carrying value of the intangible asset, **there is an impairment loss**.

For example, if the expected future net cash flows from an asset are $400,000 and its carrying amount is $350,000, no impairment has occurred. However, if the expected future net cash flows are $300,000, an impairment has occurred. The rationale for the recoverability test relies on a basic presumption: A balance sheet should report long-lived assets at no more than the carrying amounts that are recoverable.

Measuring Impairments

Global View

IFRS also uses a fair value test to measure the impairment loss. However, IFRS does not use the first-stage recoverability test under GAAP. As a result, the IFRS test is more strict than GAAP. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

If the recoverability test indicates an impairment, a company computes a loss. The **impairment loss** is the amount by which the carrying amount of the asset **exceeds its fair value** (see **Global View**). How does a company determine the fair value of an asset? It is measured based on the market price if an active market for the asset exists. If no active market exists, a company uses the **present value of expected future net cash flows to determine fair value**.

To summarize, the process of determining an impairment loss is as follows.

1. Review events or changes in circumstances for possible impairment.
2. If the review indicates a possible impairment, apply the recoverability test. If the sum of the expected future net cash flows from the long-lived asset is less than the carrying amount of the asset, an impairment has occurred.
3. The impairment loss is the amount by which the carrying amount of the asset exceeds the fair value of the asset. The fair value is the market price of the asset or the present value of expected future net cash flows.

Assuming an impairment, the journal entry to record the impairment is a debit to a loss account and a credit to accumulated depreciation. By increasing accumulated depreciation with a credit, the asset's carrying amount (book value) is decreased to reflect the impairment.

Example 10.9 Impairment—Example 1

FACTS Alou Inc. has equipment that, due to changes in its use, it reviews for possible impairment. The equipment's carrying amount is $600,000 ($800,000 cost - $200,000 accumulated depreciation). Alou determines the expected future net cash flows (undiscounted) from the use of the equipment and its eventual disposal to be $650,000. The asset has a fair value of $525,000.

QUESTION At what amount, if any, would you record an impairment on Alou's equipment?

SOLUTION

Apply the recoverability test:

Sum of the expected (undiscounted) net cash flows ($650,000) is greater than that carrying amount of the asset ($600,000).

No impairment has occurred. Therefore, Alou does not recognize an impairment loss.

Let's continue the Alou example with different facts.

Example 10.10 Impairment—Example 2

FACTS Assume the same facts as in Example 10.9, except that the expected future net cash flows from Alou's equipment are $580,000 (instead of $650,000).

QUESTION At what amount, if any, would you record an impairment on Alou's equipment?

SOLUTION

Apply the recoverability test:

Sum of the expected (undiscounted) net cash flows ($580,000) is less than that carrying amount of the asset ($600,000).

An impairment has occurred. Therefore, Alou will record an impairment loss. The amount of the impairment loss is calculated as follows.

Carrying amount of the equipment	$600,000
Fair value of equipment	(525,000)
Loss on impairment	$ 75,000

To record the impairment loss:

Loss on Impairment	75,000	
Accumulated Depreciation—Equipment		75,000

Following the impairment, the asset's carrying amount is $525,000, calculated as follows.

Cost	$800,000
Accumulated depreciation (200,000 + 75,000)	275,000
Carrying amount (book value)	$525,000

After the impairment journal entry, the updated carrying amount equals the fair value.

In Example 10.10, Alou reports the impairment loss as part of income from continuing operations, in the "Other expenses and losses" section of the income statement. Alou will continue to use these assets in operations. Therefore, it should not report the loss below "Income from continuing operations."

A company that recognizes an impairment loss should disclose in the notes the asset(s) impaired, the events leading to the impairment, the amount of the loss, and how it determined fair value (disclosing the interest rate used, if appropriate), as shown in **Illustration 10.6** for **Macy's**.

ILLUSTRATION 10.6 Disclosure of Asset Impairment

Macy's

Note 4 (partial): Restructuring, Impairment, Store Closing and Other Costs

During 2020, primarily as a result of the COVID-19 pandemic, the Company incurred non-cash impairment charges totaling $3,280 million, the majority of which was recognized during the first quarter of 2020 and consisted of $200 million of impairments primarily related to long-lived tangible and right of use assets to adjust the carrying value of certain store locations to their estimated fair value.

Note 14 (partial): Fair Value Measurements

During 2020, long-lived assets with a carrying value of $295 million were written down to their fair value of $95 million, resulting in asset impairment charges of $200 million. The fair values of these assets were calculated based on the projected cash flows and an estimated risk-adjusted rate of return that would be used by market participants in valuing these assets or prices of similar assets.

Restoration of Impairment Loss

After recording an impairment loss, the reduced carrying amount of an asset held for use becomes its new cost basis. A company does not change the new cost basis except for depreciation in future periods or for additional impairments.

Example 10.11 Restoration of Impairment Loss

FACTS At December 31, 2024, assume **Kodak Company** has a piece of equipment that assembles disposable cameras with a carrying amount of $500,000. Given that most people carry a cell phone with a high-quality camera, sales of disposable cameras have declined. Kodak determined the equipment was impaired and wrote it down to its fair value of $400,000. At the end of 2025, disposable cameras started to make a comeback, and Kodak determines that the fair value of the equipment is now $480,000.

QUESTION At what amount would you record Kodak's equipment on December 31, 2025?

SOLUTION

The carrying amount of the equipment should not change in 2025 except for the depreciation taken in 2025. Kodak **may not restore an impairment loss for an asset held for use**. The rationale for not writing the asset up in value is that the new cost basis puts the impaired asset on an equal basis with other assets that are unimpaired.

Impairment of Assets to Be Disposed Of

What happens if a company intends to dispose of an impaired asset, instead of holding it for use? At one time, **Kroger** recorded an impairment loss of $54 million on property, plant, and equipment it no longer needed due to store closures. In this case, Kroger reports the impaired asset at the lower-of-cost-or-net realizable value (fair value less costs to sell). Because Kroger

intends to dispose of the assets in a short period of time, it uses net realizable value to provide a better measure of the net cash flows that it will receive from these assets.

Kroger does not depreciate assets held for disposal during the period it holds them.

- Depreciation is inconsistent with the notion of assets to be disposed of and with the use of the lower-of-cost-or-net realizable value.
- In other words, **assets held for disposal are like inventory**; **companies should report them at the lower-of-cost-or-net realizable value**.

Because Kroger will recover the carrying value of the assets held for disposal through sale rather than through operations, it continually revalues them. Each period, the assets are reported at the lower-of-cost-or-net realizable value. Thus, **Kroger can write up or down an asset held for disposal in future periods, as long as the carrying value after the write-up never exceeds the carrying amount of the asset before the impairment**. Companies should report losses or gains related to these impaired assets as part of **income from continuing operations**.

Illustration 10.7 summarizes the key concepts in accounting for impairments.

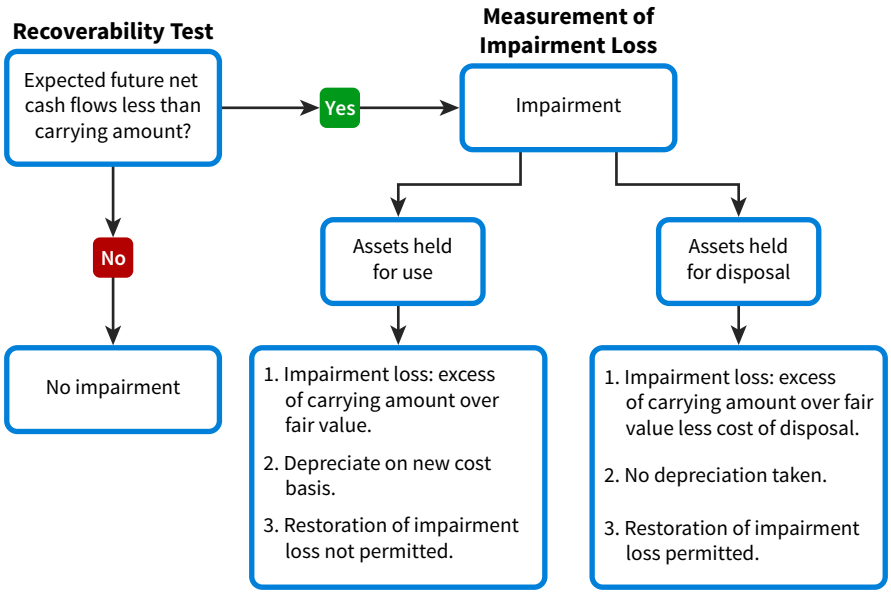

Recoverability Test
Expected future net cash flows less than carrying amount?
Yes
No
No impairment
Measurement of Impairment Loss
Impairment
Assets held for use
1. Impairment loss: excess of carrying amount over fair value.
2. Depreciate on new cost basis.
3. Restoration of impairment loss not permitted.
Assets held for disposal
1. Impairment loss: excess of carrying amount over fair value less cost of disposal.
2. No depreciation taken.
3. Restoration of impairment loss permitted.

ILLUSTRATION 10.7 Accounting for Impairments

FACTS Norwel Company manufactures miniature circuit boards used in smartphones. On June 5, 2025, Norwel purchased a circuit board stamping machine at a price of $27,000 (inclusive of taxes and installation costs). Norwel estimates the machine will have a 5-year useful life, with a salvage value of $2,000 at the end of 5 years. Norwel uses straight-line depreciation and employs the half-year convention in accounting for partial-year depreciation. Norwel's fiscal year ends on December 31.

INSTRUCTIONS

a. At what amount will the machine be reported in Norwel's balance sheet at December 31, 2026?

b. During 2027, Norwel's circuit board business is experiencing significant competition from companies with more advanced low-heat circuit boards. As a result, at June 30, 2027, Norwel conducts an impairment evaluation of the stamping machine. Norwel determines that undiscounted future cash flows for the machine are estimated to be $15,200 and the fair value of the machine, based on prices in the re-sale market, to be $13,400. Prepare the journal entry to record an impairment, if any, on the stamping machine.

c. Repeat the requirements in part (b), assuming Norwel estimates undiscounted future cash flows to be $17,900 and the fair value of the machine is $12,500.

Put It into Practice LO 10.2

Account for Impairments

SOLUTION

a. The amount reported on the December 31, 2026, balance sheet is the cost of the asset less accumulated depreciation:

Machinery	$27,000
Less: Accumulated depreciation	7,500*
Book value	$19,500

*Depreciable base ($27,000 − $2,000)	$25,000
Depreciation expense ($25,000 ÷ 5) per year	$5,000
2025: 1/2 year ($5,000 × .50)	$2,500
2026: full year	5,000
Accumulated depreciation	$7,500

b. Norwel first conducts the recoverability test, comparing the book value of the machine to the undiscounted future cash flows. This indicates the estimated future cash flows ($15,200) are less than the June 30, 2027, book value ($17,000*).

*Cost	$27,000
Less: Accumulated depreciation ($2,500 + $5,000 + $2,500)	10,000
Book value of machine	$17,000

Therefore, Norwel will record an impairment, based on comparison of the fair value of the machine and platform to the book value. The entry is as follows.

Loss on Impairment ($17,000 − $13,400)	3,600	
Accumulated Depreciation—Machinery		3,600

c. Under these facts, there is **no impairment** to be recorded. This is because the estimated undiscounted future cash flows are greater than the book value of the machinery ($17,900 is greater than $17,000). As a result, the recoverability test is met.

10.3 Depletion

LEARNING OBJECTIVE 3

Explain the accounting procedures for depletion of natural resources.

Some companies report natural resources, often called wasting assets, as part of property, plant, and equipment. **Natural resources**, such as petroleum, minerals, and timber, are used in a company's operations. These assets have two main features:

1. The complete removal (consumption) of the asset.
2. Replacement of the asset only by an act of nature.

Unlike plant and equipment, natural resources are consumed physically over the period of use and do not maintain their physical characteristics. But the accounting problems associated with natural resources are similar to those encountered with plant and equipment. The questions to be answered are:

- How do companies establish the cost basis of the natural resource?
- What pattern of cost allocation should companies employ?

Recall that the term **depletion** is used for the process of allocating the cost of natural resources over the period they are consumed.

Establishing a Depletion Base

How do we determine the depletion base for natural resources? For example, a company like **ExxonMobil** makes sizable expenditures to find natural resources. And for every successful discovery, there are many failures. Furthermore, the company encounters long delays between the time it incurs costs and the time it obtains the benefits from the extracted resources. As a result, a company in the extractive industries, like ExxonMobil, frequently adopts a conservative policy in accounting for the expenditures related to finding and extracting natural resources.

Computation of the depletion base involves four factors: (1) acquisition cost, (2) exploration costs, (3) development costs, and (4) restoration costs.

Acquisition Costs

Acquisition cost is the price ExxonMobil pays to obtain the property rights to search and find an undiscovered natural resource. It also can be the price paid for an already-discovered resource. A third type of acquisition cost can be lease payments for property containing a productive natural resource. Included in these acquisition costs are royalty payments to the owner of the property.

- Generally, the acquisition cost of natural resources is recorded in an account titled Undeveloped Property.
- A company later assigns that cost to the natural resource if exploration efforts are successful.
- If the efforts are unsuccessful, it writes off the acquisition cost as a loss.

Exploration Costs

As soon as a company has the right to use the property, it often incurs **exploration costs** to find the resource.

- When exploration costs are substantial, some companies capitalize them into the depletion base.
- In the oil and gas industry, where the costs of finding the resource are significant and the risks of finding the resource are very uncertain, most large companies expense these costs.
- Smaller oil and gas companies often capitalize these exploration costs.

For homework purposes, unless stated otherwise, assume that exploration costs are expensed as incurred.

Development Costs

Companies divide **development costs** into two parts: (1) tangible equipment costs and (2) intangible development costs. Tangible equipment costs include all of the transportation and other heavy equipment needed to extract the resource and get it ready for market. Because companies can move the heavy equipment from one extracting site to another, **companies do not normally include tangible equipment costs in the depletion base**. Instead, they use separate depreciation entries to allocate the costs of such equipment.

- Some tangible assets (e.g., a drilling rig foundation) cannot be moved.
- Companies depreciate these assets over their useful life or the life of the resource, whichever is shorter.

Intangible development costs, on the other hand, are such items as drilling costs, tunnels, shafts, and wells.

- These costs have no tangible characteristics but are needed for the production of the natural resource.
- **Intangible development costs are considered part of the depletion base.**

Restoration Costs

Companies sometimes incur substantial costs to restore property to its natural state after extraction has occurred. These are **restoration costs**.

- Companies consider **restoration costs part of the depletion base**.
- The amount included in the depletion base is the fair value of the obligation to restore the property after extraction.

A more complete discussion of the accounting for asset restoration costs and related liabilities (often referred to as asset retirement obligations) is provided in Chapter 9. Similar to other long-lived assets, **companies deduct from the depletion base any salvage value to be received on the property.**

Cost Allocation

Once the company establishes the depletion base, the next problem is determining how to allocate the cost of the natural resource to accounting periods. Normally, companies compute depletion (often referred to as **cost depletion**) on a **units-of-production method** (an activity approach). That means depletion is a function of the number of units extracted during the period. In this approach, the total cost of the natural resource less salvage value is divided by the number of units estimated to be in the resource deposit, to obtain a **cost per unit of product**. To compute depletion, the cost per unit is then multiplied by the number of units extracted.

Example 10.12 Depletion Cost per Unit

FACTS Evershine Co. acquired the right to use 1,000 acres of land in Alaska to mine for silver. The lease cost is $150,000, and the related exploration costs on the property are $100,000 and are expensed as incurred. Intangible development costs incurred in opening the mine are $850,000. Therefore, total costs related to the mine—before the first ounce of silver is extracted—are $1,000,000 ($150,000 + $850,000). Evershine estimates that the mine will provide approximately 100,000 ounces of silver.

QUESTION What is Evershine's depletion cost per unit for the silver?

SOLUTION

The computation of the depletion cost per unit (depletion rate) is as follows.

$$\frac{\textbf{Total Cost} - \textbf{Salvage Value}}{\textbf{Total Estimated Units Available}} = \textbf{Depletion Cost per Unit}$$

$$\frac{\$1{,}000{,}000}{100{,}000} = \$10 \text{ per ounce}$$

Continuing with Example 10.12, if Evershine extracts 25,000 ounces in the first year, then the depletion for the year is $250,000 (25,000 ounces × $10). Evershine records the depletion as follows.

Inventory (Silver)	250,000	
Silver Mine		250,000

Evershine debits Inventory for the total depletion for the year and credits silver Mine to reduce the carrying amount of the natural resource. Evershine credits Inventory when it sells the inventory and debits Cost of Goods Sold. The amount not sold remains in inventory and is reported in the current assets section of the balance sheet.

Sometimes companies use an Accumulated Depletion account. In that case, Evershine's balance sheet would present the cost of the natural resource and the amount of accumulated depletion entered to date as shown in **Illustration 10.8**.

ILLUSTRATION 10.8 Balance Sheet Presentation of Natural Resource

Silver mine (at cost)	$1,000,000	
Less: Accumulated depletion	250,000	$750,000

For purposes of homework, credit any accumulated depletion to the asset account.

Evershine may also depreciate on a units-of-production basis the tangible equipment used in extracting the silver. This approach is appropriate if it can directly assign the estimated lives of the equipment to one given resource deposit. If Evershine uses the equipment on more than one job, other cost allocation methods such as straight-line or accelerated depreciation methods would be more appropriate.

Estimating Recoverable Reserves

Sometimes companies need to change the estimate of recoverable reserves. They do so either because they have new information or because more sophisticated production processes are available. Natural resources such as oil and gas deposits and some rare metals have recently provided the greatest challenges. Estimates of these reserves are in large measure merely "knowledgeable guesses."

This problem is the **same as accounting for changes in estimates for the useful lives of property, plant, and equipment**. The procedure is to **revise the depletion rate on a prospective basis**: A company divides the remaining cost by the new estimate of the remaining recoverable reserves. This approach has much merit because the required estimates are so uncertain.

Liquidating Dividends

A company often owns as its only major asset a property from which it intends to extract natural resources. If the company does not expect to purchase additional properties, it may gradually distribute to stockholders their capital investments by paying **liquidating dividends**, which are dividends greater than the balance in retained earnings.

The major accounting problem is to distinguish between dividends that are a return of capital and those that are not. Because the dividend is a return of the investor's original contribution, the company issuing a liquidating dividend should debit Paid-in Capital in Excess of Par for that portion related to the original investment, instead of debiting Retained Earnings.

Example 10.13
Liquidating Dividend

FACTS Callahan Mining had a retained earnings balance of $1,650,000, accumulated depletion on mineral properties of $2,100,000, and paid-in capital in excess of par of $5,435,493. Callahan's board declared a dividend of $3 per share on the 1,000,000 shares outstanding.

QUESTION How should Callahan record this dividend?

SOLUTION

To record the $3,000,000 cash dividend:

Retained Earnings	1,650,000	
Paid-in Capital in Excess of Par—Common Stock	1,350,000	
Cash (1,000,000 × $3)		3,000,000

Callahan must inform stockholders that the $3 dividend per share represents a $1.65 ($1,650,000 ÷ 1,000,000 shares) per share return on investment and a $1.35 ($1,350,000 ÷ 1,000,000 shares) per share liquidating dividend.

Continuing Controversy

A major controversy relates to the accounting for exploration costs in the oil and gas industry. Conceptually, the question is whether unsuccessful ventures are a cost of those that are successful. There are two primary views on the issue:

- Those who support the **full-cost concept** argue that the cost of drilling a dry hole is a cost needed to find the commercially profitable wells.
- Others believe that companies should capitalize only the costs of successful projects. This is the **successful-efforts concept**. Its proponents believe that the only relevant measure

for a project is the cost directly related to that project, and that companies should report any remaining costs as period charges. In addition, they argue that an unsuccessful company will capitalize many costs that will make it appear, over a short period of time, as profitable as a successful company.

Large international oil companies such as **ExxonMobil** use the successful-efforts approach. Most of the smaller, exploration-oriented companies use the full-cost approach. The differences in net income figures under the two methods can be staggering. Analysts estimated that the difference between full-cost and successful-efforts for **Chevron** at one time was $500 million over a 10-year period (income lower under successful-efforts).

One requirement of the full-cost approach is that companies can capitalize costs only up to a ceiling, which is the present value of company reserves. Companies must expense costs above that ceiling. When the price of oil falls, so does the present value of companies' reserves, which forces expensing of costs beyond the ceiling. Not unexpectedly, companies have lobbied for leniency, but the SEC has ruled that the write-offs had to be taken. For example, **Mesa Limited Partnerships** restated its $31 million profit to a $169 million loss, and **Pacific Lighting** restated its $44.5 million profit to a $70.5 million loss.

Currently, companies can use either the full-cost approach or the successful-efforts approach. This guidance evolved after Congress directed the FASB to develop one method of accounting for the oil and gas industry. However, when the FASB did so, the government chose not to accept it. Subsequently, the SEC attempted to develop a new approach, failed, and then urged the FASB to develop disclosure requirements in this area. After all these changes, the two alternatives still exist.

Accounting Matters — Full-Cost or Successful-Efforts?

The controversy in the oil and gas industry provides a number of lessons. First, it demonstrates the strong influence that the federal government has in financial reporting matters. Second, the concern for economic consequences places pressure on the FASB to weigh the economic effects of any required standard. Third, this controversy illustrates the difficulty of establishing standards when affected groups have differing viewpoints.

Indeed, failure to consider the economic consequences of accounting principles is a frequent criticism of the profession. However, the neutrality concept requires that the statements be free from bias. Freedom from bias requires that the statements reflect economic reality, even if undesirable effects occur. Finally, the debate over oil and gas accounting reinforces the need for a conceptual framework with carefully developed guidelines for recognition, measurement, and reporting, so that interested parties can more easily resolve issues of this nature in the future.

Put It into Practice LO 10.3

Account for Depletion

FACTS Misey Mining Company purchased land on February 1, 2025, at a cost of $2,380,000. It estimated that a total of 120,000 tons of mineral was available for mining. After it has removed all the natural resources, the company will be required to restore the property to its previous state because of strict environmental protection laws. It estimates the fair value of this restoration obligation at $180,000. It believes it will be able to sell the property afterwards for $200,000. Misey Mining incurred developmental costs of $400,000 before it was able to do any mining. In 2025, resources removed totaled 60,000 tons. The company sold 44,000 tons.

INSTRUCTIONS

a. Compute the following information for 2025.

1. Per ton cost.
2. Total cost of December 31, 2025, inventory.
3. Total cost of goods sold for 2025.

b. Prepare the journal entry to record the extraction (depletion) of minerals in 2025.

SOLUTION

a. Total cost is $2,960,000 ($2,380,000 + $180,000 + $400,000)

1. Depletion rate: $\frac{\$2,960,000 - \$200,000}{120,000 \text{ tons}} = \$23$ per ton

2. December 31, 2025, inventory:

60,000 tons removed − 44,000 tons sold = 16,000 tons remaining in inventory

16,000 tons × $23 per ton = $368,000 inventory balance

3. Cost of goods sold in 2025:

44,000 tons sold × $23 per ton = $1,012,000 cost of goods sold

b. To record depletion of minerals:

Inventory ($23 × 60,000 tons)	1,380,000	
Mineral Mine		1,380,000

10.4 Presentation and Decision Analysis

LEARNING OBJECTIVE 4

Demonstrate how to report and analyze property, plant, equipment, and natural resources.

Presentation of Property, Plant, Equipment, and Natural Resources

A company should disclose the basis of valuation—usually historical cost—for property, plant, equipment, and natural resources, along with pledges, liens, and other commitments related to these assets. It should not offset any liability secured by property, plant, equipment, and natural resources against these assets. Instead, this obligation should be reported in the liabilities section. The company should separate property, plant, and equipment not currently employed as producing assets in the business (such as idle facilities or land held as an investment) from assets used in operations.

When depreciating assets, a company credits the valuation account Accumulated Depreciation. Using an accumulated depreciation account permits the user of the financial statements to see the original cost of the asset and the amount of depreciation that the company has expensed in past years.

When depleting natural resources, some companies use an accumulated depletion account. Many, however, simply credit the natural resource account directly. The rationale for this approach is that the natural resources are physically consumed, making direct reduction of the cost of the natural resources appropriate.

Because of the significant impact on the financial statements of the depreciation method(s) used, companies should disclose the following.

1. Depreciation expense for the period.
2. Balances of major classes of depreciable assets, by nature and function.
3. Accumulated depreciation, either by major classes of depreciable assets or in total.
4. A general description of the method or methods used in computing depreciation with respect to major classes of depreciable assets. [2][6]

[6]Some believe that companies should disclose the average useful life of the assets or the range of years of asset life to help users understand the age and life of property, plant, and equipment.

Special disclosure requirements relate to the oil and gas industry. Companies engaged in these activities must disclose the following in their financial statements: (1) the basic method of accounting for those costs incurred in oil and gas producing activities (e.g., full-cost versus successful-efforts), and (2) how the company disposes of costs related to extractive activities (e.g., expensing immediately versus depreciation and depletion). [3][7]

The annual report of **International Paper Company** in **Illustration 10.9** shows a typical disclosure. It uses condensed balance sheet data supplemented with details and policies in the notes to the financial statements.

ILLUSTRATION 10.9 Disclosures for Property, Plant, Equipment, and Natural Resources

International Paper Company

Consolidated Balance Sheet (partial)

In millions at December 31	2020	2019
Assets		
Total current assets	$11,236	$ 6,639
Plants, properties and equipment, net	12,217	13,004
Forestlands	311	391
Investments	1,178	1,721
Long-term financial assets	2,257	7,088
Goodwill	3,315	3,347
Right of use assets	459	434
Deferred charges and other assets	745	847
Total assets	$31,718	$33,471

Note 1 (partial)

Plants, Properties and Equipment. Plants, properties and equipment are stated at cost, less accumulated depreciation. Expenditures for betterments are capitalized, whereas normal repairs and maintenance are expensed as incurred. The units-of-production method of depreciation is used for pulp and paper mills, and the straight-line method is used for other plants and equipment.

Note 9 (partial)

Plants, Properties and Equipment

In millions at December 31	2020	2019
Pulp, paper and packaging facilities	$32,439	$32,292
Other plants, properties and equipment	1,156	1,224
Gross cost	33,595	33,516
Less: Accumulated depreciation	21,378	20,512
Plants, properties and equipment, net	$12,217	$13,004

Annual straight-line depreciable lives generally are, for buildings—20 to 40 years, and for machinery and equipment—3 to 20 years. Depreciation expense was $1.2 billion for the each of the years ended December 31, 2020, 2019 and 2018. Cost of products sold excludes depreciation and amortization expense.

[7]Public companies, in addition to these two required disclosures, must include as supplementary information numerous schedules reporting reserve quantities; capitalized costs; acquisition, exploration, and development activities; and a standardized measure of discounted future net cash flows related to proven oil and gas reserve quantities. Given the importance of these disclosures, the SEC has issued rules for disclosures to help investors better understand the nature of oil and gas company operations. These rules provide guidance on (1) estimates of quantities of proved reserves, (2) estimates of future net revenues, and (3) disclosure of reserve information. See "Modernization of Oil and Gas Reporting," SEC Financial Reporting Release No. 78 (Release No. 33-8995) (December 31, 2008).

Decision Analysis of Property, Plant, and Equipment

Analysts evaluate assets relative to activity (turnover) and profitability. Using net sales, total assets, and net income from **Kellogg's** annual report, we can calculate three common ratios used to analyze property, plant, and equipment.

(in millions)	2020	2019	2018
Net sales	$13,770	$13,578	$13,547
Total assets	17,996	17,564	17,780
Net income	1,264	977	1,344

Asset Turnover

How efficiently a company uses its assets to generate sales is measured by the **asset turnover**. This ratio divides net sales by average total assets for the period. The resulting number is the dollars of sales produced by each dollar invested in assets. We can calculate Kellogg's asset turnover for 2020 and 2019 as follows.

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

$$2020: \frac{\$13{,}770}{(\$17{,}996 + \$17{,}564) \div 2} = 0.774 \qquad 2019: \frac{\$13{,}578}{(\$17{,}564 + \$17{,}780) \div 2} = 0.768$$

The asset turnover shows that Kellogg generated sales of $0.77 per dollar of assets in 2020 and 2019.

Asset turnover ratios can vary considerably among industries. For example, a grocery chain like **Kroger** has an asset turnover ratio of 2.82 while a financial institution like **JPMorgan Chase** has a much lower turnover of .04. When evaluating this ratio, it is important to benchmark against companies in the same industries and over time within the same company.

Profit Margin on Sales

Another measure for analyzing the use of property, plant, and equipment is the **profit margin on sales** (return on sales). Calculated as net income divided by net sales, this profitability ratio does not, by itself, answer the question of how profitably a company uses its assets. But by relating the profit margin on sales to the asset turnover during a period of time, we can determine how profitably the company used assets during that period of time in a measure of the return on assets. Using the above Kellogg data, we compute the profit margin on sales and the return on assets as follows.

$$\text{Profit Margin on Sales} = \frac{\text{Net Income}}{\text{Net Sales}}$$

$$2020: \frac{\$1{,}264}{\$13{,}770} = 9.18\% \qquad 2019: \frac{\$977}{\$13{,}578} = 7.20\%$$

Return on Assets

The **return on assets (ROA)** is computed directly by dividing net income by average total assets. Using the Kellogg data, we compute the ratio as follows.

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Average Total Assets}}$$

$$\text{2020: } \frac{\$1{,}264}{(\$17{,}996 + \$17{,}564) \div 2} = 7.11\% \qquad \text{2019: } \frac{\$977}{(\$17{,}564 + \$17{,}780) \div 2} = 5.53\%$$

The 2020 return on assets of 7.11% calculated here is the same result from multiplying the profit margin on sales by the asset turnover, as follows.

$$\text{Return on Assets} = \text{Profit Margin on Sales} \times \text{Asset Turnover}$$

$$\text{2020: } 9.18\% \times 0.774 = 7.11\% \qquad \text{2019: } 7.20\% \times 0.768 = 5.53\%$$

The rate of return on assets measures profitability well because it combines the effects of profit margin and asset turnover. A higher return on assets indicates a company is efficiently using its assets to generate a profit. For Kellogg, we see a positive trend in its return on assets from 2019 to 2020 such that it increased its net income without a significant investment in assets.

Analytics in Action A Better Way to Estimate

Calculating potential asset impairments is no easy task and involves a significant amount of data. Consider a company like **Marriott International**, which recently recorded impairment charges of $116 million on its hotel assets. Marriott has over 7,500 properties (1.4 million rooms) across the globe and three tiers of quality: Luxury, Premium, and Select.

Different global and economic factors impact impairment calculations on each group of properties differently. In the footnotes to its financial statements, Marriott indicates that it estimates fair value of its property assets using an **income approach.** This reflects internally developed Level 3 discounted cash flows that include, among other things, expectations of future cash flows based on historical experience and projected growth rates, usage estimates, and demand trends. There can be significant variation in any one of those estimates, which would impact whether an impairment is recorded and the amount of loss.

Taking advantage of large amounts of data, and the tools available to analyze that data, allows companies like Marriott to best estimate potential impairment losses. A key input to these fair value calculations is the discount rate. The following table indicates the impact the discount rate choice can have on fair value estimates, based on present value.

Fair Value Estimates (in millions)

Discount Rate	4.0%	4.5%	5.0%
Term (in years)	10	10	10
Cash Flow	$10,500	$10,500	$10,500
Present Value	$85,164	$83,084	$81,078
		$2,081	$2,005

As indicated, a 0.5% change in discount rate over a 10-year period can swing the present value calculation by over $2 billion. Present value estimates can be very sensitive to changes in inputs, like discount rates, cash flows, and terms.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

APPENDIX 10A Income Tax Depreciation

LEARNING OBJECTIVE 5*

***Describe income tax methods of depreciation.**

For the most part, a financial accounting course does not address issues related to the computation of income taxes. However, because the concepts of tax depreciation are similar to those of book depreciation and because tax depreciation methods are sometimes adopted for book purposes, we present an overview of this subject.

Congress passed the Accelerated Cost Recovery System (ACRS) as part of the Economic Recovery Tax Act of 1981. The goal was to stimulate capital investment through faster write-offs and to bring more uniformity to the write-off period. For assets purchased in the years 1981 through 1986, companies use ACRS and its preestablished "cost recovery periods" for various classes of assets.

In the Tax Reform Act of 1986 Congress enacted a **Modified Accelerated Cost Recovery System (MACRS)**. It applies to depreciable assets placed in service in 1987 and later. The following discussion is based on these MACRS rules. Realize that tax depreciation rules are subject to change annually.[8]

Modified Accelerated Cost Recovery System

The computation of depreciation under MACRS differs from the computation under GAAP in three respects: (1) a mandated tax life, which is generally shorter than the economic life; (2) cost recovery on an accelerated basis; and (3) an assigned salvage value of zero.

Tax Lives (Recovery Periods)

Each item of depreciable property belongs to a property class. The recovery period (depreciable tax life) of an asset depends on its property class. **Illustration 10A.1** presents the MACRS property classes.

ILLUSTRATION 10A.1 MACRS Property Classes

3-year property	Includes small tools, horses, and assets used in research and development activities
5-year property	Includes automobiles, trucks, computers and peripheral equipment, and office machines
7-year property	Includes office furniture and fixtures, agriculture equipment, oil exploration and development equipment, railroad track, manufacturing equipment, and any property not designated by law as being in any other class
10-year property	Includes railroad tank cars, mobile homes, boilers, and certain public utility property
15-year property	Includes roads, shrubbery, and certain low-income housing
20-year property	Includes waste-water treatment plants and sewer systems
27.5-year property	Includes residential rental property
39-year property	Includes nonresidential real property

[8]For example, in an effort to jump-start the economy following the September 11, 2001, terrorist attacks, Congress passed the Job Creation and Worker Assistance Act of 2002 (the Act). The Act allowed a 30% first-year **bonus depreciation** for assets placed into service after September 11, 2001, but before September 11, 2004. Since then, Congress has enacted enhanced bonus depreciation provisions to encourage companies to invest in fixed assets because they can front-load depreciation expense and reduce their tax bill. The most recent tax law—the Tax Cuts and Jobs Act of 2017—allows **100%** bonus depreciation (full write-off in the year of purchase) for new and used assets placed in service before 2026. See Tax Foundation, "Preliminary Details and Analysis of the Tax Cuts and Jobs Act," No. 241 (December 2017).

Tax Depreciation Methods

Companies compute depreciation expense using the tax basis—usually the cost—of the asset. The depreciation method depends on the MACRS property class, as shown in Illustration 10A.2.

ILLUSTRATION 10A.2 Depreciation Method for Various MACRS Property Classes

MACRS Property Class	Depreciation Method
3-, 5-, 7-, and 10-year property	Double-declining-balance
15- and 20-year property	150% declining-balance
27.5- and 39-year property	Straight-line

Depreciation computations for income tax purposes are based on the **half-year convention**. That is, a half year of depreciation is allowable in the year of acquisition and in the year of disposition.[9] A company depreciates an asset to a zero value so that there is no salvage value at the end of its MACRS life.

Use of IRS-published tables, shown in Illustration 10A.3, simplifies application of these depreciation methods.

ILLUSTRATION 10A.3 IRS Table of MACRS Depreciation Rates, by Property Class

MACRS Depreciation Rates By Class of Property

Recovery Year	3-Year (200% DB)	5-Year (200% DB)	7-Year (200% DB)	10-Year (200% DB)	15-Year (150% DB)	20-Year (150% DB)
1	33.33	20.00	14.29	10.00	5.00	3.750
2	44.45	32.00	24.49	18.00	9.50	7.219
3	14.81*	19.20	17.49	14.40	8 55	6.677
4	7.41	11.52*	12.49	11.52	7.70	6.177
5		11.52	8.93*	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55*	5.90*	4.888
8			4.46	6.55	5.90	4.522
9				6.56	5.91	4.462*
10				6.55	5.90	4.461
11				3.28	5.91	4.462
12					5.90	4.461
13					5.91	4.462
14					5.90	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

*Switch to straight-line depreciation.

[9] The tax law requires mid-quarter and mid-month conventions for MACRS purposes in certain circumstances.

Example of MACRS

To illustrate depreciation computations under both MACRS and GAAP straight-line accounting, assume the following facts for a computer and peripheral equipment purchased by Denise Rode Company on January 1, 2025.

Acquisition Date	January 1, 2025
Cost	$100,000
Estimated useful life	7 years
Estimated salvage value	$16,000
MACRS class life	5 years
MACRS method	200% declining-balance
GAAP method	Straight-line
Disposal proceeds—January 2, 2032	$11,000

Using the rates from the MACRS depreciation rate schedule for a 5-year class of property, Rode computes depreciation for tax purposes as shown in **Illustration 10A.4**.

ILLUSTRATION 10A.4
Computation of MACRS Depreciation

MACRS Depreciation

2025	$100,000 × .20	=	$ 20,000
2026	$100,000 × .32	=	32,000
2027	$100,000 × .192	=	19,200
2028	$100,000 × .1152	=	11,520
2029	$100,000 × .1152	=	11,520
2030	$100,000 × .0576	=	5,760
	Total depreciation		$100,000

Rode computes the depreciation under GAAP straight-line method, with $16,000 of estimated salvage value and an estimated useful life of 7 years, as shown in **Illustration 10A.5**.

ILLUSTRATION 10A.5
Computation of GAAP Depreciation

GAAP Depreciation

($100,000 – $16,000) ÷ 7 = $12,000 annual depreciation

× 7 years

1/1/25–1/2/32 $84,000 total depreciation

The MACRS depreciation recovers the total cost of the asset on an accelerated basis. But, a taxable gain of $11,000 results from the sale of the asset at January 2, 2032. Therefore, the net effect on taxable income for the years 2025 through 2032 is $89,000 ($100,000 depreciation − $11,000 gain).

Under GAAP, the company recognizes a loss on disposal of $5,000 ($16,000 book value − $11,000 disposal proceeds). The net effect on income before income taxes for the years 2025 through 2032 is $89,000 ($84,000 depreciation + $5,000 loss), the same as the net effect of MACRS on taxable income.

Even though the net effects are equal in amount, the deferral of income tax payments under MACRS from early in the life of the asset to later in the life is desirable. The different amounts of depreciation for income tax reporting and financial GAAP reporting in each year are a matter of timing and result in temporary differences, which require **interperiod tax allocation**. (See Chapter 18 for an extended treatment of this topic.)

Optional Straight-Line Method

An alternate MACRS method exists for determining depreciation deductions. Based on the straight-line method, it is referred to as the **optional** (elective) **straight-line method**. This method applies to the six classes of property described earlier. The alternate MACRS applies the straight-line method to the MACRS recovery periods. It ignores salvage value.

Under the optional straight-line method, in the first year in which the property is put in service, the company deducts half of the amount of depreciation that would be permitted for a full year (half-year convention). *Use the half-year convention for homework problems.*

Tax versus Book Depreciation

GAAP requires that companies allocate the cost of depreciable assets to expense over the expected useful life of the asset in a systematic and rational manner. Some argue that from a cost-benefit perspective it would be better for companies to adopt the MACRS approach in order to eliminate the necessity of maintaining two different sets of records.

However, the tax laws and financial reporting have different objectives. The purpose of taxation is to raise revenue from constituents in an equitable manner. The purpose of financial reporting is to reflect the economic substance of a transaction as closely as possible and to help predict the amounts, timing, and uncertainty of future cash flows. Because these objectives differ, the adoption of one method for both tax and book purposes in all cases is not in accordance with GAAP.

Accounting Matters — In the Bonus (Boomerang?)

As discussed, Congress has used changes in tax depreciation rules related to bonus depreciation to encourage capital investment, thereby boosting the economy in response to economic downturns. Below is a summary of the bonus depreciation history.

Businesses love bonus depreciation. It allows them to front-load depreciation expense, which lowers taxable income and the amount of taxes companies pay in the early years of an asset's life. Investors need to beware. Although bonus depreciation may be a good thing for the economy, it can distort cash flow measures—making them look artificially strong when the allowances are in place but reversing once the bonus depreciation expires.

Law	Provisions
Job Creation and Worker Assistance Act of 2002	Allowed a 30% deduction for assets purchased before September 2004.
Amendment to Job Creation and Worker Assistance Act or 2002 (enacted in 2003)	Extended bonus depreciation provisions to 2005.
Small Business Jobs Act of 2010	Enacted 50% conus depreciation tor smaller companies for assets purchased in 2010.
Tax Cuts and Jobs Act of 2017	Allows **100%** bonus depreciation tor new and used assets placed in service before 2026.

Sources: D. Zion and B. Carcache, "Bonus Depreciation Boomerang," *Credit Suisse First Boston Equity Research* (February 19, 2004); and T. Nitti, "Tax Geek Tuesday: Changes to Depreciation in the New Tax Law,"*Forbes* (January 2, 2018).

Review and Practice

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Learning Objectives Review

1 Describe depreciation concepts and methods of depreciation.

Depreciation allocates the cost of tangible assets to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset. Three factors involved in the depreciation process are (1) determining the depreciation base for the asset, (2) estimating service lives, and (3) selecting a method of cost apportionment (depreciation).

Methods of depreciation are as follows.

1. **Activity method.** Assumes that depreciation is a function of use or productivity instead of the passage of time. The life of the asset is considered in terms of either the output it provides, or an input measure such as the number of hours it works.
2. **Straight-line method.** Considers depreciation a function of time instead of a function of usage. The straight-line procedure is often the most conceptually appropriate when the decline in usefulness is constant from period to period.
3. **Decreasing-charge methods.** Provide for a higher depreciation cost in the earlier years and lower charges in later periods. The main justification for this approach is that the asset is the most productive in its early years.
4. **Group and composite methods.** The group method is frequently used when the assets are fairly similar in nature and have approximately the same useful lives. The composite method may be used when the assets are dissimilar and have different lives. These methods may combine straight-line/activity approaches. **Other depreciation issues** relate to partial period depreciation and changes in depreciation estimates.

2 Identify the accounting issues related to asset impairment.

The process to determine an impairment loss is as follows. (1) Review events and changes in circumstances for possible impairment. (2) If events or changes suggest impairment, determine if the sum of the expected future net cash flows from the long-lived asset is less than the carrying amount of the asset. If less, measure the impairment loss. (3) The impairment loss is the amount by which the carrying amount of the asset exceeds the fair value of the asset.

After a company records an impairment loss, the reduced carrying amount of the long-lived asset is its new cost basis. **Impairment losses may not be restored for assets held for use.** If the company expects to dispose of the asset, it should report the impaired asset at the lower-of-cost-or-net realizable value. It is not depreciated. It can be continuously revalued, as long as the write-up is never to an amount greater than the carrying amount before impairment.

3 Explain the accounting procedures for depletion of natural resources.

To account for depletion of natural resources, companies (1) establish the depletion base and (2) write off resource cost. Four factors are part of establishing the depletion base: (a) acquisition costs, (b) exploration costs, (c) development costs, and (d) restoration costs. To write off resource cost, companies normally compute depletion on the units-of-production method. Thus, **depletion is a function of the number of units withdrawn during the period**. To obtain a cost per unit of product, the total cost of the natural resource less salvage value is divided by the number of units estimated to be in the resource deposit. To compute depletion, this cost per unit is multiplied by the number of units withdrawn.

4 Demonstrate how to report and analyze property, plant, equipment, and natural resources.

The basis of valuation for property, plant, and equipment and for natural resources should be disclosed along with pledges, liens, and other commitments related to these assets. Companies should not offset any liability secured by property, plant, and equipment or by natural resources against these assets, but should report it in the liabilities section. When depreciating assets, credit a valuation account normally called Accumulated Depreciation. When depleting assets, use an accumulated depletion account, or credit the depletion directly to the natural resource account. Companies engaged in significant oil and gas producing activities must provide additional disclosures about these activities. Analysis may be performed to evaluate the **asset turnover, profit margin on sales, and return on assets**.

*5 Describe income tax methods of depreciation.

Congress enacted a Modified Accelerated Cost Recovery System (MACRS) in the Tax Reform Act of 1986. It applies to depreciable assets placed in service in 1987 and later. The computation of depreciation under MACRS differs from the computation under GAAP in three respects: (1) a mandated tax life, which is generally shorter than the economic life; (2) cost recovery on an accelerated basis; and (3) an assigned salvage value of zero.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. Distinguish among depreciation, depletion, and amortization.

2. Identify the factors that are relevant in determining the annual depreciation charge, and explain whether these factors are determined objectively or whether they are based on judgment.

3. Some believe that accounting depreciation measures the decline in the value of fixed assets. Do you agree? Explain.

4. Explain how estimation of service lives can result in unrealistically high carrying values for fixed assets.

5. The plant manager of a manufacturing firm suggested in a conference of the company's executives that accountants should speed up depreciation on the machinery in the finishing department because improvements were rapidly making those machines obsolete, and a depreciation fund big enough to cover their replacement is needed. Discuss the accounting concept of depreciation and the effect on a business concern of the depreciation recorded for plant assets, paying particular attention to the issues raised by the plant manager.

6. For what reasons are plant assets retired? What are physical and economic factors?

7. What basic questions must be answered before the amount of the depreciation charge can be computed?

8. Workman Company purchased a machine on January 2, 2025, for $800,000. The machine has an estimated useful life of 5 years and a salvage value of $100,000. Depreciation was computed by the 150% declining-balance method. What is the amount of accumulated depreciation at the end of December 31, 2026?

9. Silverman Company purchased machinery for $162,000 on January 1, 2025. It is estimated that the machinery will have a useful life of 20 years, salvage value of $15,000, production of 84,000 units, and working hours of 42,000. During 2025, the company uses the machinery for 14,300 hours, and the machinery produces 20,000 units. Compute depreciation under the straight-line, units-of-output, working hours, sum-of-the-years'-digits, and double-declining-balance methods.

10. What are the major factors considered in determining what depreciation method to use?

11. Under what conditions is it appropriate for a business to use the composite method of depreciation for its plant assets? What are the advantages and disadvantages of this method?

12. If Remmers, Inc. uses the composite method and its composite rate is 7.5% per year, what entry should it make when plant assets that originally cost $50,000 and have been used for 10 years are sold for $14,000?

13. A building that was purchased on December 31, 2011, for $2,500,000 was originally estimated to have a life of 50 years with no salvage value at the end of that time. Depreciation has been recorded through 2025. During 2026, an examination of the building by an engineering firm discloses that its estimated useful life is 15 years after 2025. What should be the amount of depreciation for 2026?

14. Charlie Parker, president of Spinners Company, has recently noted that depreciation increases cash provided by operations and therefore depreciation is a good source of funds. Do you agree? Discuss.

15. Andrea Kremer purchased a computer for $8,000 on July 1, 2025. She intends to depreciate it over 4 years using the double-declining-balance method. Salvage value is $1,000. Compute depreciation for 2026.

16. Walkin Inc. is considering the write-down of its long-term plant because of a lack of profitability. Explain to the management of Walkin how to determine whether a write-down is permitted.

17. Last year, Wyeth Company recorded an impairment on an asset held for use. Recent appraisals indicate that the asset has increased in value. Should Wyeth record this recovery in value under GAAP?

18. Toro Co. has equipment with a carrying amount of $700,000. The expected future net cash flows from the equipment are $705,000, and its fair value is $590,000. The equipment is expected to be used in operations in the future. What amount (if any) should Toro report as an impairment to its equipment?

19. Explain how gains or losses on impaired assets should be reported in income.

20. It has been suggested that plant and equipment could be replaced more quickly if depreciation rates for income tax and accounting purposes were substantially increased. As a result, business operations would receive the benefit of more modern and more efficient plant facilities. Discuss the merits of this proposition.

21. List (a) the similarities and (b) the differences in the accounting treatments of depreciation and depletion.

22. In the extractive industries, businesses may pay dividends in excess of net income. How can this practice be justified?

23. Shumway Oil uses successful-efforts accounting and also provides full-cost results as well. Under full-cost, Shumway Oil would have reported retained earnings of $42 million and net income of $4 million. Under successful-efforts, retained earnings were $29 million, and net income was $3 million. Explain the difference between full-costing and successful-efforts accounting.

24. **Target** in 2020 reported net income of $3,281 million, net sales of $77,130 million, and average total assets of $42,035 million. What is Target's asset turnover? What is Target's return on assets?

*25. What is a modified accelerated cost recovery system (MACRS)? Speculate as to why this system is now required for tax purposes.

Brief Exercises

(Unless otherwise instructed, round all answers to the nearest dollar.)

BE10.1 (LO 1) Fernandez Corporation purchased a truck at the beginning of 2025 for $50,000. The truck is estimated to have a salvage value of $2,000 and a useful life of 160,000 miles. It was driven 23,000 miles in 2025 and 31,000 miles in 2026. Compute depreciation expense using the units-of-production method for 2025 and 2026.

BE10.2 (LO 1) Lockard Company purchased machinery on January 1, 2025, for $80,000. The machinery is estimated to have a salvage value of $8,000 after a useful life of 8 years. (a) Compute 2025 depreciation expense using the straight-line method. (b) Compute 2025 depreciation expense using the straight-line method assuming the machinery was purchased on September 1, 2025.

BE10.3 (LO 1) Use the information for Lockard Company given in BE10.2. (a) Compute 2025 depreciation expense using the sum-of-the-years'-digits method. (b) Compute 2025 depreciation expense using the sum-of-the-years'-digits method, assuming the machinery was purchased on April 1, 2025.

BE10.4 (LO 1) Use the information for Lockard Company given in BE10.2. (a) Compute 2025 depreciation expense using the double-declining-balance method. (b) Compute 2025 depreciation expense using the double-declining-balance method, assuming the machinery was purchased on October 1, 2025.

BE10.5 (LO 1) Cominsky Company purchased a machine on July 1, 2026, for $28,000. Cominsky paid $200 in title fees and county property tax of $125 on the machine. In addition, Cominsky paid $500 shipping charges for delivery, and $475 was paid to a local contractor to build and wire a platform for the machine on the plant floor. The machine has an estimated useful life of 6 years with a salvage value of $3,000. Determine the depreciation base of Cominsky's new machine. Cominsky uses straight-line depreciation.

BE10.6 (LO 1) Dickinson Inc. owns the following assets.

Asset	Cost	Salvage	Estimated Useful Life
A	$70,000	$7,000	10 years
B	50,000	5,000	5 years
C	82,000	4,000	12 years

Compute the composite depreciation rate and the composite life of Dickinson's assets.

BE10.7 (LO 1) Holt Company purchased a computer for $8,000 on January 1, 2024. Straight-line depreciation is used, based on a 5-year life and a $1,000 salvage value. In 2026, the estimates are revised. Holt now feels the computer will be used until December 31, 2027, when it can be sold for $500. Compute the 2026 depreciation.

BE10.8 (LO 2) Jurassic Company owns equipment that cost $900,000 and has accumulated depreciation of $380,000. The expected future net cash flows from the use of the asset are expected to be $550,000. The fair value of the equipment is $400,000. Prepare the journal entry, if any, to record the impairment loss.

BE10.9 (LO 2) Use the information in BE10.8. Assume that the expected net cash flows are expected to be $500,000. Prepare the journal entry, if any, to record the impairment loss.

BE10.10 (LO 3) Everly Corporation acquires a coal mine at a cost of $400,000. Intangible development costs total $100,000. After extraction has occurred, Everly must restore the property (estimated fair value of the obligation is $80,000), after which it can be sold for $160,000. Everly estimates that 4,000 tons of coal can be extracted. If 700 tons are extracted the first year, prepare the journal entry to record depletion.

BE10.11 (LO 4) In its recent annual report, **Campbell Soup Company** reports beginning-of-the-year total assets of $13,148 million, end-of-the-year total assets of $12,372 million, total sales of $8,691 million, and net income of $1,628 million. (a) Compute Campbell's asset turnover. (b) Compute Campbell's profit margin on sales. (c) Compute Campbell's return on assets using (1) asset turnover and profit margin and (2) net income. (Round to two decimal places.)

***BE10.12 (LO 5)** Francis Corporation purchased an asset at a cost of $50,000 on March 1, 2025. The asset has a useful life of 8 years and a salvage value of $4,000. For tax purposes, the MACRS class life is 5 years. Compute tax depreciation for each year 2025–2030.

Exercises

E10.1 (LO 1) Excel **(Depreciation Computations—SL, SYD, DDB)** Deluxe Ezra Company purchases equipment on January 1, Year 1, at a cost of $469,000. The asset is expected to have a service life of 12 years and a salvage value of $40,000.

Instructions

a. Compute the amount of depreciation for each of Years 1 through 3 using the straight-line depreciation method.

b. Compute the amount of depreciation for each of Years 1 through 3 using the sum-of-the-years'-digits method.

c. Compute the amount of depreciation for each of Years 1 through 3 using the double-declining-balance method. (In performing your calculations, round constant percentage to the nearest one-hundredth of a point and round answers to the nearest dollar.)

E10.2 (LO 1) (Depreciation—Conceptual Understanding) Rembrandt Company acquired a plant asset at the beginning of Year 1. The asset has an estimated service life of 5 years. An employee has prepared depreciation schedules for this asset using three different methods to compare the results of using one method with the results of using other methods. You are to assume that the following schedules have been correctly prepared for this asset using (1) the straight-line method, (2) the sum-of-the-years'-digits method, and (3) the double-declining-balance method.

Year	Straight-Line	Sum-of-the-Years'-Digits	Double-Declining-Balance
1	$ 9,000	$15,000	$20,000
2	9,000	12,000	12,000
3	9,000	9,000	7,200
4	9,000	6,000	4,320
5	9,000	3,000	1,480
Total	$45,000	$45,000	$45,000

Instructions

Answer the following questions.

a. What is the cost of the asset being depreciated?

b. What amount, if any, was used in the depreciation calculations for the salvage value for this asset?

c. Which method will produce the highest charge to income in Year 1?

d. Which method will produce the highest charge to income in Year 4?

e. Which method will produce the highest book value for the asset at the end of Year 3?

f. If the asset is sold at the end of Year 3, which method would yield the highest gain (or lowest loss) on disposal of the asset?

E10.3 (LO 1) (Depreciation Computations—SYD, DDB—Partial Periods) Judds Company purchased a new plant asset on April 1, 2025, at a cost of $711,000. It was estimated to have a service life of 20 years and a salvage value of $60,000. Judds' accounting period is the calendar year.

Instructions

a. Compute the depreciation for this asset for 2025 and 2026 using the sum-of-the-years'-digits method.

b. Compute the depreciation for this asset for 2025 and 2026 using the double-declining-balance method.

E10.4 (LO 1) Excel (Depreciation Computations—Five Methods) Jon Seceda Furnace Corp. purchased machinery for $315,000 on May 1, 2025. It is estimated that it will have a useful life of 10 years, salvage value of $15,000, production of 240,000 units, and working hours of 25,000. During 2026, Seceda Corp. uses the machinery for 2,650 hours, and the machinery produces 25,500 units.

Instructions

From the information given, compute the depreciation charge for 2026 under each of the following methods. (Round to the nearest dollar.)

a. Straight-line.

b. Units-of-output.

c. Working hours.

d. Sum-of-the-years'-digits.

e. Declining-balance (use 20% as the annual rate).

E10.5 (LO 1) (Depreciation Computations—Four Methods) Robert Parish Corporation purchased a new machine for its assembly process on August 1, 2025. The cost of this machine was $117,900. The company estimated that the machine would have a salvage value of $12,900 at the end of its service life. Its life is estimated at 5 years, and its working hours are estimated at 21,000 hours. Year-end is December 31.

Instructions

Compute the depreciation expense under the following methods. Each of the following should be considered unrelated.

a. Straight-line depreciation for 2025.

b. Activity method for 2025, assuming that machine usage was 800 hours.

c. Sum-of-the-years'-digits for 2026.

d. Double-declining-balance for 2026.

E10.6 (LO 1) (Depreciation Computations—Five Methods, Partial Periods) Muggsy Bogues Company purchased equipment for $212,000 on October 1, 2025. It is estimated that the equipment will have a useful life of 8 years and a salvage value of $12,000. Estimated production is 40,000 units and estimated working hours are 20,000. During 2025, Bogues uses the equipment for 525 hours and the equipment produces 1,000 units.

Instructions

Compute depreciation expense under each of the following methods. Bogues is on a calendar-year basis ending December 31.

a. Straight-line method for 2025.

b. Activity method (units of output) for 2025.

c. Activity method (working hours) for 2025.

d. Sum-of-the-years'-digits method for 2027.

e. Double-declining-balance method for 2026.

E10.7 (LO 1) (Different Methods of Depreciation) Jackel Industries presents you with the following information.

Description	Date Purchased	Cost	Salvage Value	Life in Years	Depreciation Method	Accumulated Depreciation to 12/31/26	Depreciation for 2027
Machine A	2/12/25	$142,500	$16,000	10	**(a)**	$33,350	**(b)**
Machine B	8/15/24	**(c)**	21,000	5	SL	29,000	**(d)**
Machine C	7/21/23	75,400	23,500	8	DDB	**(e)**	**(f)**
Machine D	10/15/**(g)**	219,000	69,000	5	SYD	70,000	**(h)**

Instructions

Complete the table for the year ended December 31, 2027. The company depreciates all assets using the half-year convention.

E10.8 (LO 1) (Depreciation Computation—Replacement, Nonmonetary Exchange) George Zidek Corporation bought a machine on June 1, 2023, for $31,000, f.o.b. the place of manufacture. Freight to the point where it was set up was $200, and $500 was expended to install it. The machine's useful life was estimated at 10 years, with a salvage value of $2,500. On June 1, 2024, an essential part of the machine is replaced, at a cost of $1,980, with one designed to reduce the cost of operating the machine. The cost of the old part and related depreciation cannot be determined with any accuracy.

On June 1, 2027, the company buys a new machine of greater capacity for $35,000, delivered, trading in the old machine which has a fair value and trade-in allowance of $20,000. Preparing the old machine for removal from the plant cost $75, and expenditures to install the new one were $1,500. It is estimated that the new machine has a useful life of 10 years, with a salvage value of $4,000 at the end of that time. (The exchange has commercial substance.)

Instructions

Assuming that depreciation is to be computed on the straight-line basis, compute the annual depreciation on the new equipment that should be provided for the fiscal year beginning June 1, 2027. (Round to the nearest dollar.)

E10.9 (LO 1) (Composite Depreciation) Presented below is information related to LeBron James Manufacturing Corporation.

Asset	Cost	Estimated Salvage	Estimated Life (in years)
A	$40,500	$5,500	10
B	33,600	4,800	9
C	36,000	3,600	9
D	19,000	1,500	7
E	23,500	2,500	6

Instructions

a. Compute the rate of depreciation per year to be applied to the plant assets under the composite method.

b. Prepare the adjusting entry necessary at the end of the year to record depreciation for the year.

c. Prepare the entry to record the sale of asset D for cash of $4,800. It was used for 6 years, and depreciation was entered under the composite method.

E10.10 (LO 1) (Depreciation Computations, SYD) Five Satins Company purchased a piece of equipment at the beginning of 2022. The equipment cost $430,000. It has an estimated service life of 8 years and an expected salvage value of $70,000. The sum-of-the-years'-digits method of depreciation is being used. Someone has already correctly prepared a depreciation schedule for this asset. This schedule shows that $60,000 will be depreciated for a particular calendar year.

Instructions

Show calculations to determine for what particular year the depreciation amount for this asset will be $60,000.

E10.11 (LO 1) (Depreciation—Change in Estimate) Machinery purchased for $60,000 by Tom Brady Co. in 2021 was originally estimated to have a life of 8 years with a salvage value of $4,000 at the end of that time. Depreciation has been entered for 5 years on this basis. In 2026, it is determined that the total estimated life should be 10 years with a salvage value of $4,500 at the end of that time. Assume straight-line depreciation.

Instructions

a. Prepare the entry to correct the prior years' depreciation, if necessary.

b. Prepare the entry to record depreciation for 2026.

E10.12 (LO 1) (Depreciation Computation—Addition, Change in Estimate) In 1998, Herman Moore Company completed the construction of a building at a cost of $2,000,000 and first occupied it in January 1999. It was estimated that the building will have a useful life of 40 years and a salvage value of $60,000 at the end of that time.

Early in 2009, an addition to the building was constructed at a cost of $500,000. At that time, it was estimated that the remaining life of the building would be, as originally estimated, an additional 30 years, and that the addition would have a life of 30 years and a salvage value of $20,000.

In 2027, it is determined that the probable life of the building and addition will extend to the end of 2058, or 20 years beyond the original estimate.

Instructions

a. Using the straight-line method, compute the annual depreciation that would have been charged from 1999 through 2008.

b. Compute the annual depreciation that would have been charged from 2009 through 2026.

c. Prepare the entry, if necessary, to adjust the account balances because of the revision of the estimated life in 2027.

d. Compute the annual depreciation to be charged, beginning with 2027.

E10.13 (LO 1) (Depreciation—Replacement, Change in Estimate) Greg Maddox Company constructed a building at a cost of $2,200,000 and occupied it beginning in January 2006. It was estimated at that time that its life would be 40 years, with no salvage value.

In January 2026, a new roof was installed at a cost of $300,000, and it was estimated then that the building would have a useful life of 25 years from that date. The cost of the old roof was $160,000.

Instructions

a. What amount of depreciation should have been charged annually from the years 2006 to 2025? (Assume straight-line depreciation.)

b. What entry should be made in 2026 to record the replacement of the roof?

c. Prepare the entry in January 2026 to record the revision in the estimated life of the building, if necessary.

d. What amount of depreciation should be charged for the year 2026?

E10.14 (LO 1) (Error Analysis and Depreciation, SL and SYD) Mike Devereaux Company shows the following entries in its Equipment account for 2026. All amounts are based on historical cost.

Equipment

2026				2026		
Jan.	1	Balance	134,750	June 30	Cost of equipment sold (purchased prior to 2026)	23,000
Aug.	10	Purchases	32,000			
	12	Freight on equipment purchased	700			
	25	Installation costs	2,700			
Nov.	10	Repairs	500			

Instructions

a. Prepare any correcting entries necessary.

b. Assuming that depreciation is to be charged for a full year on the ending balance in the asset account, compute the proper depreciation charge for 2026 under each of the methods listed below. Assume an estimated life of 10 years, with no salvage value. The machinery included in the January 1, 2026, balance was purchased in 2024.

1. Straight-line. **2.** Sum-of-the-years'-digits.

E10.15 (LO 1) (Depreciation for Fractional Periods) On March 10, 2027, Lost World Company sells equipment that it purchased for $192,000 on August 20, 2020. It was originally estimated that the equipment would have a life of 12 years and a salvage value of $16,800 at the end of that time, and depreciation has been computed on that basis. The company uses the straight-line method of depreciation.

Instructions

a. Compute the depreciation charge on this equipment for 2020, for 2027, and the total charge for the period from 2021 to 2026, inclusive, under each of the six following assumptions with respect to partial periods.

1. Depreciation is computed for the exact period of time during which the asset is owned. (Use 365 days for base and record depreciation through March 9, 2027.)

2. Depreciation is computed for the full year on the January 1 balance in the asset account.

3. Depreciation is computed for the full year on the December 31 balance in the asset account.

4. Depreciation for one-half year is charged on plant assets acquired or disposed of during the year.

5. Depreciation is computed on additions from the beginning of the month following acquisition and on disposals to the beginning of the month following disposal.

6. Depreciation is computed for a full period on all assets in use for over one-half year, and no depreciation is charged on assets in use for less than one-half year. (Use 365 days for base.)

b. Briefly evaluate the methods above, considering them from the point of view of basic accounting theory as well as simplicity of application.

E10.16 (LO 2) (Impairment) Presented below is information related to equipment owned by Suarez Company at December 31, 2025.

Cost	$9,000,000
Accumulated depreciation to date	1,000,000
Expected future net cash flows	7,000,000
Fair value	4,800,000

Assume that Suarez will continue to use this asset in the future. As of December 31, 2025, the equipment has a remaining useful life of 4 years.

Instructions

a. Prepare the journal entry (if any) to record the impairment of the asset at December 31, 2025.

b. Prepare the journal entry to record depreciation expense for 2026.

c. The fair value of the equipment at December 31, 2026, is $5,100,000. Prepare the journal entry (if any) necessary to record this increase in fair value.

E10.17 (LO 2) (Impairment) Assume the same information as E10.16, except that Suarez intends to dispose of the equipment in the coming year. It is expected that the cost of disposal will be $20,000.

Instructions

a. Prepare the journal entry (if any) to record the impairment of the asset at December 31, 2025.

b. Prepare the journal entry (if any) to record depreciation expense for 2026.

c. The asset was not sold by December 31, 2026. The fair value of the equipment on that date is $5,300,000. Prepare the journal entry (if any) necessary to record this increase in fair value. It is expected that the cost of disposal is still $20,000.

E10.18 (LO 2) (Impairment) The management of Petro Garcia Inc. was discussing whether certain equipment should be written off as a charge to current operations because of obsolescence. This equipment has a cost of $900,000 with depreciation to date of $400,000 as of December 31, 2025. On December 31, 2025, management projected its future net cash flows from this equipment to be $300,000 and its fair value to be $230,000. The company intends to use this equipment in the future.

Instructions

a. Prepare the journal entry (if any) to record the impairment at December 31, 2025.

b. Where should the gain or loss (if any) on the write-down be reported in the income statement?

c. At December 31, 2026, the equipment's fair value increased to $260,000. Prepare the journal entry (if any) to record this increase in fair value.

d. What accounting issues did management face in accounting for this impairment?

E10.19 (LO 3) (Depletion Computations—Timber) Stanislaw Timber Company owns 9,000 acres of timberland purchased in 2014 at a cost of $1,400 per acre. At the time of purchase, the land without the timber was valued at $400 per acre. In 2015, Stanislaw built fire lanes and roads, with a life of 30 years, at a cost of $84,000. Every year, Stanislaw sprays to prevent disease at a cost of $3,000 per year and spends $7,000 to maintain the fire lanes and roads. During 2016, Stanislaw selectively logged and sold 700,000 board feet of timber, of the estimated 3,500,000 board feet. In 2017, Stanislaw planted new seedlings to replace the trees cut at a cost of $100,000.

Instructions

a. Determine the depreciation expense and the cost of timber sold related to depletion for 2016.

b. Stanislaw has not logged since 2016. If Stanislaw logged and sold 900,000 board feet of timber in 2027, when the timber cruise (appraiser) estimated 5,000,000 board feet, determine the cost of timber sold related to depletion for 2027.

E10.20 (LO 3) (Depletion Computations—Oil) Diderot Drilling Company has leased property on which oil has been discovered. The oil wells on this property produced 18,000 barrels of oil during the past year that sold at an average sales price of $55 per barrel. Total oil resources of this property are estimated to be 250,000 barrels.

The lease provided for an outright payment of $500,000 to the lessor (owner) before drilling could be commenced and an annual rental of $31,500. A premium of 5% of the sales price of every barrel of oil removed is to be paid annually to the lessor. In addition, Diderot (lessee) is to clean up all the waste and debris from drilling and to bear the costs of reconditioning the land for farming when the wells are abandoned. The estimated fair value, at the time of the lease, of this clean-up and reconditioning is $30,000.

Instructions

From the provisions of the lease agreement, you are to compute the cost per barrel for the past year, exclusive of operating costs, to Diderot Drilling Company. (Round to the nearest cent.)

E10.21 (LO 3) (Depletion Computations—Timber) Forda Lumber Company owns a 7,000-acre tract of timber purchased in 2011 at a cost of $1,300 per acre. At the time of purchase, the land was estimated to have a value of $300 per acre without the timber. Forda Lumber Company has not logged this tract since it was purchased. In 2025, Forda had the timber cruised. The cruise (appraiser) estimated that each acre contained 8,000 board feet of timber. In 2025, Forda built 10 miles of roads at a cost of $7,840 per mile. After the roads were completed, Forda logged and sold 3,500 trees containing 850,000 board feet.

Instructions

a. Determine the cost of timber sold related to depletion for 2025.

b. If Forda depreciates the logging roads on the basis of timber cut, determine the depreciation expense for 2025.

c. If Forda plants five seedlings at a cost of $4 per seedling for each tree cut, how should Forda treat the reforestation?

E10.22 (LO 3) (Depletion Computations—Mining) Alcide Mining Company purchased land on February 1, 2025, at a cost of $1,190,000. It estimated that a total of 60,000 tons of mineral was available for mining. After it has removed all the natural resources, the company will be required to restore the property to its previous state because of strict environmental protection laws. It estimates the fair value of this restoration obligation at $90,000. It believes it will be able to sell the property afterwards for $100,000. It incurred developmental costs of $200,000 before it was able to do any mining. In 2025, resources removed totaled 30,000 tons. The company sold 22,000 tons.

Instructions

Compute the following information for 2025.

a. Per unit material cost.

b. Total material cost of December 31, 2025, inventory.

c. Total material cost in cost of goods sold at December 31, 2025.

E10.23 (LO 3) (Depletion Computations—Minerals) At the beginning of 2025, Aristotle Company acquired a mine for $970,000. Of this amount, $100,000 was ascribed to the land value and the remaining portion to the minerals in the mine. Surveys conducted by geologists have indicated that approximately 12,000,000 units of ore appear to be in the mine. Aristotle incurred $170,000 of development costs associated with this mine prior to any extraction of minerals. It also determined that the fair value of its obligation to prepare the land for an alternative use when all of the mineral has been removed was $40,000. During 2025, 2,500,000 units of ore were extracted and 2,100,000 of these units were sold.

Instructions

Compute the following.

a. The total amount of depletion for 2025.

b. The amount that is charged as an expense for 2025 for the cost of the minerals sold during 2025.

E10.24 (LO 4) Groupwork (Ratio Analysis) A recent annual report of **Tootsie Roll Industries** contains the following information.

(in millions)	Current Year	Prior Year
Total assets	$930.9	$920.1
Total liabilities	197.1	208.6
Net sales	515.6	517.4
Net income	80.7	67.3

Instructions

Compute the following ratios for Tootsie Roll for the current year.

a. Asset turnover.

b. Return on assets.

c. Profit margin on sales.

d. How can the asset turnover be used to compute the return on assets?

***E10.25 (LO 5) (Book vs. Tax (MACRS) Depreciation)** Futabatei Enterprises purchased a delivery truck on January 1, 2025, at a cost of $27,000. The truck has a useful life of 7 years with an estimated salvage value of $6,000. The straight-line method is used for book purposes. For tax purposes, the truck, having an MACRS class life of 7 years, is classified as 5-year property; the optional MACRS tax rate tables are used to compute depreciation. In addition, assume that for 2025 and 2026 the company has revenues of $200,000 and operating expenses (excluding depreciation) of $130,000.

Instructions

a. Prepare income statements for 2025 and 2026. (The final amount reported on the income statement should be income before income taxes.)

b. Compute taxable income for 2025 and 2026.

c. Determine the total depreciation to be taken over the useful life of the delivery truck for both book and tax purposes.

d. Explain why depreciation for book and tax purposes will generally be different over the useful life of a depreciable asset.

*E10.26 (LO 5) **(Book vs. Tax (MACRS) Depreciation)** Shimei Inc. purchased computer equipment on March 1, 2025, for $31,000. The computer equipment has a useful life of 10 years and a salvage value of $1,000. For tax purposes, the MACRS class life is 5 years.

Instructions

a. Assuming that the company uses the straight-line method for book and tax purposes, what is the depreciation expense reported in (1) the financial statements for 2025 and (2) the tax return for 2025?

b. Assuming that the company uses the double-declining-balance method for both book and tax purposes, what is the depreciation expense reported in (1) the financial statements for 2025 and (2) the tax return for 2025?

c. Why is depreciation for tax purposes different from depreciation for book purposes even if the company uses the same depreciation method to compute them both?

Problems

P10.1 (LO 1) Excel Groupwork **(Depreciation for Partial Period—SL, SYD, and DDB)** Alladin Company purchased Machine #201 on May 1, 2025. The following information relating to Machine #201 was gathered at the end of May.

Price	$85,000
Credit terms	2/10, n/30
Freight-in	$800
Preparation and installation costs	$3,800
Labor costs during regular production operations	$10,500

It is expected that the machine could be used for 10 years, after which the salvage value would be zero. Alladin intends to use the machine for only 8 years, however, after which it expects to be able to sell it for $1,500. The invoice for Machine #201 was paid May 5, 2025. Alladin uses the calendar year as the basis for the preparation of financial statements.

Instructions

a. Compute the depreciation expense for the years indicated using the following methods. (Round to the nearest dollar.)

1. Straight-line method for 2025.

2. Sum-of-the-years'-digits method for 2026.

3. Double-declining-balance method for 2025.

b. Suppose Kate Crow, the president of Alladin, tells you that because the company is a new organization, she expects it will be several years before production and sales reach optimum levels. She asks you to recommend a depreciation method that will allocate less of the company's depreciation expense to the early years and more to later years of the assets' lives. What method would you recommend?

P10.2 (LO 1) **(Depreciation for Partial Periods—SL, ACT, SYD, and DB)** The cost of equipment purchased by Charleston, Inc., on June 1, 2025, is $89,000. It is estimated that the machine will have a $5,000 salvage value at the end of its service life. Its service life is estimated at 7 years, its total working hours are estimated at 42,000, and its total production is estimated at 525,000 units. During 2025, the machine was operated 6,000 hours and produced 55,000 units. During 2026, the machine was operated 5,500 hours and produced 48,000 units.

Instructions

Compute depreciation expense on the machine for the year ending December 31, 2025, and the year ending December 31, 2026, using the following methods.

a. Straight-line.

b. Units-of-output.

c. Working hours.

d. Sum-of-the-years'-digits.

e. Double-declining-balance

P10.3 (LO 1) **(Depreciation—SYD, ACT, SL, and DDB)** The following data relate to the Machinery account of Eshkol, Inc. at December 31, 2025.

	Machinery			
	A	B	C	D
Original cost	$46,000	$51,000	$80,000	$80,000
Year purchased	2020	2021	2022	2024
Useful life	10 years	15,000 hours	15 years	10 years
Salvage value	$ 3,100	$ 3,000	$ 5,000	$ 5,000
Depreciation method	Sum-of-the-years'-digits	Activity	Straight-line	Double-declining-balance
Accum. depr. through 2025*	$31,200	$35,200	$15,000	$16,000

*In the year an asset is purchased, Eshkol, Inc. does not record any depreciation expense on the asset. In the year an asset is retired or traded in, Eshkol, Inc. takes a full year's depreciation on the asset.

The following transactions occurred during 2026.

a. On May 5, Machine A was sold for $13,000 cash. The company's bookkeeper recorded this retirement in the following manner in the cash receipts journal.

Cash	13,000	
Machinery (Machine A)		13,000

b. On December 31, it was determined that Machine B had been used 2,100 hours during 2026.

c. On December 31, before computing depreciation expense on Machine C, the management of Eshkol, Inc. decided the useful life remaining from January 1, 2026, was 10 years.

d. On December 31, it was discovered that a machine purchased in 2025 had been expensed completely in that year. This machine cost $28,000 and has a useful life of 10 years and no salvage value. Management has decided to use the double-declining-balance method for this machine, which can be referred to as "Machine E."

Instructions

Prepare the necessary correcting entries for the year 2026. Record the appropriate depreciation expense on the above-mentioned machines. No entry is necessary for Machine D.

P10.4 (LO 1) (Depreciation and Error Analysis) A depreciation schedule for semi-trucks of Ichiro Manufacturing Company was requested by your auditor soon after December 31, 2026, showing the additions, retirements, depreciation, and other data affecting the income of the company in the 4-year period 2023 to 2026, inclusive. The following data were ascertained.

Balance of Trucks account, Jan. 1, 2023	
Truck No. 1 purchased Jan. 1, 2020, cost	$18,000
Truck No. 2 purchased July 1, 2020, cost	22,000
Truck No. 3 purchased Jan. 1, 2022, cost	30,000
Truck No. 4 purchased July 1, 2022, cost	24,000
Balance, Jan. 1, 2023	$94,000

The Accumulated Depreciation—Trucks account previously adjusted to January 1, 2023, and entered in the ledger, had a balance on that date of $30,200 (depreciation on the four trucks from the respective dates of purchase, based on a 5-year life, no salvage value). No charges had been made against the account before January 1, 2023.

Transactions between January 1, 2023, and December 31, 2026, which were recorded in the ledger, are as follows.

July 1, 2023	Truck No. 3 was traded for a larger one (No. 5), the agreed purchase price of which was $40,000. Ichiro paid the automobile dealer $22,000 cash on the transaction. The entry was a debit to Trucks and a credit to Cash, $22,000. The transaction has commercial substance.
Jan. 1, 2024	Truck No. 1 was sold for $3,500 cash; entry debited Cash and credited Trucks, $3,500.
July 1, 2025	A new truck (No. 6) was acquired for $42,000 cash and was charged at that amount to the Trucks account. (Assume truck No. 2 was not retired.)
July 1, 2025	Truck No. 4 was damaged in a wreck to such an extent that it was sold as junk for $700 cash. Ichiro received $2,500 from the insurance company. The entry made by the bookkeeper was a debit to Cash, $3,200, and credits to Miscellaneous Income, $700, and Trucks, $2,500.

Entries for straight-line depreciation had been made at the close of each year as follows: 2023, $21,000; 2024, $22,500; 2025, $25,050; and 2026, $30,400.

Instructions

a. For each of the 4 years, compute separately the increase or decrease in net income arising from the company's errors in determining or entering depreciation or in recording transactions affecting trucks, ignoring income tax considerations.

b. Prepare one compound journal entry as of December 31, 2026, for adjustment of the Trucks account to reflect the correct balances as revealed by your schedule, assuming that the books have not been closed for 2026.

P10.5 (LO 1, 3) (Depletion and Depreciation—Mining) Khamsah Mining Company has purchased a tract of mineral land for $900,000. It is estimated that this tract will yield 120,000 tons of ore with sufficient mineral content to make mining and processing profitable. It is further estimated that 6,000 tons of ore will be mined the first and last year and 12,000 tons every year in between. (Assume 11 years of mining operations.) The land will have a salvage value of $30,000.

The company builds necessary structures and sheds on the site at a cost of $36,000. It is estimated that these structures can serve 15 years but, because they must be dismantled if they are to be moved, they have no salvage value. The company does not intend to use the buildings elsewhere. Mining machinery installed at the mine was purchased secondhand at a cost of $60,000. This machinery cost the former owner $150,000 and was 50% depreciated when purchased. Khamsah Mining estimates that about half of this machinery will still be useful when the present mineral resources have been exhausted, but that dismantling and removal costs will just about offset its value at that time. The company does not intend to use the machinery elsewhere. The remaining machinery will last until about one-half the present estimated mineral ore has been removed and will then be worthless. Cost is to be allocated equally between these two classes of machinery.

Instructions

a. As chief accountant for the company, you are to prepare a schedule showing estimated depletion and depreciation costs for each year of the expected life of the mine.

b. Also compute the depreciation and depletion for the first year assuming actual production of 5,000 tons. Nothing occurred during the year to cause the company engineers to change their estimates of either the mineral resources or the life of the structures and equipment.

P10.6 (LO 3) (Depletion, Timber, and Unusual Loss) Conan O'Brien Logging and Lumber Company owns 3,000 acres of timberland on the north side of Mount Leno, which was purchased in 2013 at a cost of $550 per acre. In 2025, O'Brien began selectively logging this timber tract. In May 2025, Mount Leno erupted, burying the timberland of O'Brien under a foot of ash. All of the timber on the O'Brien tract was downed. In addition, the logging roads, built at a cost of $150,000, were destroyed, as well as the logging equipment, with a net book value of $300,000.

At the time of the eruption, O'Brien had logged 20% of the estimated 500,000 board feet of timber. Prior to the eruption, O'Brien estimated the land to have a value of $200 per acre after the timber was harvested. O'Brien includes the logging roads in the depletion base.

O'Brien estimates it will take 3 years to salvage the downed timber at a cost of $700,000. The timber can be sold for pulp wood at an estimated price of $3 per board foot. The value of the land is unknown, but must be considered nominal due to future uncertainties.

Instructions

a. Determine the depletion cost per board foot for the timber harvested prior to the eruption of Mount Leno.

b. Prepare the journal entry to record the depletion prior to the eruption.

c. If this tract represents approximately half of the timber holdings of O'Brien, determine the amount of the unusual loss due to the eruption of Mount Leno for the year ended December 31, 2025.

P10.7 (LO 1, 3) (Natural Resources—Timber) Bronson Paper Products purchased 10,000 acres of forested timberland in March 2025. The company paid $1,700 per acre for this land, which was above the $800 per acre most farmers were paying for cleared land. During April, May, June, and July 2025, Bronson cut enough timber to build roads using moveable equipment purchased on April 1, 2025. The cost of the roads was $250,000, and the cost of the equipment was $225,000; this equipment was expected to have a $9,000 salvage value and would be used for the next 15 years. Bronson selected the straight-line method of depreciation for the moveable equipment. Bronson began actively harvesting timber in August and by December had harvested and sold 540,000 board feet of timber of the estimated 6,750,000 board feet available for cutting.

In March 2026, Bronson planted new seedlings in the area harvested during the winter. Cost of planting these seedlings was $120,000. In addition, Bronson spent $8,000 in road maintenance and $6,000 for pest spraying during calendar-year 2026. The road maintenance and spraying are annual costs. During 2026, Bronson harvested and sold 774,000 board feet of timber of the estimated 6,450,000 board feet available for cutting.

In March 2027, Bronson again planted new seedlings at a cost of $150,000, and also spent $15,000 on road maintenance and pest spraying. During 2027, the company harvested and sold 650,000 board feet of timber of the estimated 6,500,000 board feet available for cutting.

Instructions

Compute the amount of depreciation and depletion expense for each of the 3 years (2025, 2026, and 2027). Assume that the roads are usable only for logging and therefore are included in the depletion base.

P10.8 (LO 1) Groupwork (Comprehensive Fixed-Asset Problem) Darby Sporting Goods Inc. has been experiencing growth in the demand for its products over the last several years. The last two Olympic Games greatly increased the popularity of basketball around the world. As a result, a European sports retailing consortium entered into an agreement with Darby's Roundball Division to purchase basketballs and other accessories on an increasing basis over the next 5 years.

To be able to meet the quantity commitments of this agreement, Darby had to obtain additional manufacturing capacity. A real estate firm located an available factory in close proximity to Darby's Roundball manufacturing facility, and Darby agreed to purchase the factory and used machinery from Encino Athletic Equipment Company on October 1, 2024. Renovations were necessary to convert the factory for Darby's manufacturing use.

The terms of the agreement required Darby to pay Encino $50,000 when renovations started on January 1, 2025, with the balance to be paid as renovations were completed. The overall purchase price for the factory and machinery was $400,000. The building renovations were contracted to Malone Construction at $100,000. The payments made, as renovations progressed during 2025, are shown below. The factory was placed in service on January 1, 2026.

	1/1	4/1	10/1	12/31
Encino	$50,000	$90,000	$110,000	$150,000
Malone		30,000	30,000	40,000

On January 1, 2025, Darby secured a $500,000 line-of-credit with a 12% interest rate to finance the purchase cost of the factory and machinery, and the renovation costs. Darby drew down on the line-of-credit to meet the payment schedule shown above; this was Darby's only outstanding loan during 2025.

Bob Sprague, Darby's controller, will capitalize the maximum allowable interest costs for this project. Darby's policy regarding purchases of this nature is to use the appraisal value of the land for book purposes and prorate the balance of the purchase price over the remaining items. The building had originally cost Encino $300,000 and had a book value of $50,000, while the machinery originally cost $125,000 and had a book value of $40,000 on the date of sale. The land was recorded on Encino's books at $40,000. An appraisal, conducted by independent appraisers at the time of acquisition, valued the land at $290,000, the building at $105,000, and the machinery at $45,000.

Angie Justice, chief engineer, estimated that the renovated plant would be used for 15 years, with an estimated salvage value of $30,000. Justice estimated that the productive machinery would have a remaining useful life of 5 years and a salvage value of $3,000. Darby's depreciation policy specifies the 200% declining-balance method for machinery and the 150% declining-balance method for the plant. One-half year's depreciation is taken in the year the plant is placed in service, and one-half year is allowed when the property is disposed of or retired. Darby uses a 360-day year for calculating interest costs.

Instructions

a. Determine the amounts to be recorded on the books of Darby Sporting Goods Inc. as of December 31, 2025, for each of the following properties acquired from Encino Athletic Equipment Company.

1. Land. **2.** Buildings. **3.** Machinery.

b. Calculate Darby Sporting Goods Inc.'s 2026 depreciation expense for each of the properties acquired from Encino Athletic Equipment Company.

(CMA adapted)

P10.9 (LO 2) (Impairment) Roland Company uses special strapping equipment in its packaging business. The equipment was purchased in January 2024 for $10,000,000 and had an estimated useful life of 8 years with no salvage value. At December 31, 2025, new technology was introduced that would accelerate the obsolescence of Roland's equipment. Roland's controller estimates that expected future net cash flows on the equipment will be $6,300,000 and that the fair value of the equipment is $5,600,000.

Roland intends to continue using the equipment, but it is estimated that the remaining useful life is 4 years. Roland uses straight-line depreciation.

Instructions

a. Prepare the journal entry (if any) to record the impairment at December 31, 2025.

b. Prepare any journal entries for the equipment at December 31, 2026. The fair value of the equipment at December 31, 2026, is estimated to be $5,900,000.

c. Repeat the requirements for (a) and (b), assuming that Roland intends to dispose of the equipment and that it has not been disposed of as of December 31, 2026.

P10.10 (LO 1) Groupwork (Comprehensive Depreciation Computations) Kohlbeck Corporation, a manufacturer of steel products, began operations on October 1, 2024. The accounting department of Kohlbeck has started the fixed-asset and depreciation schedule presented as follows.

Kohlbeck Corporation
Fixed-Asset and Depreciation Schedule
For Fiscal Years Ended September 30, 2025, and September 30, 2026

Assets	Acquisition Date	Cost	Salvage	Depreciation Method	Estimated Life in Years	Depreciation Expense Year Ended September 30	
						2025	2026
Land A	October 1, 2024	$ (1)	N/A*	N/A	N/A	N/A	N/A
Building A	October 1, 2024	(2)	$40,000	Straight-line	(3)	$13,600	(4)
Land B	October 2, 2024	(5)	N/A	N/A	N/A	N/A	N/A
Building B	Under Construction	$320,000 to date	—	Straight-line	30	—	(6)
Donated Equipment	October 2, 2024	(7)	3,000	150% declining-balance	10	(8)	(9)
Machinery A	October 2, 2024	(10)	6,000	Sum-of-the-years-digits	8	(11)	(12)
Machinery B	October 1, 2025	(13)	—	Straight-line	20	—	(14)

*N/A—Not applicable

You have been asked to assist in completing this schedule. In addition to ascertaining that the data already on the schedule are correct, you have obtained the following information from the company's records and personnel.

1. Depreciation is computed from the first of the month of acquisition to the first of the month of disposition.
2. Land A and Building A were acquired from a predecessor corporation. Kohlbeck paid $800,000 for the land and building together. At the time of acquisition, the land had an appraised value of $90,000, and the building had an appraised value of $810,000.
3. Land B was acquired on October 2, 2024, in exchange for 2,500 newly issued shares of Kohlbeck's common stock. At the date of acquisition, the stock had a par value of $5 per share and a fair value of $30 per share. During October 2024, Kohlbeck paid $16,000 to demolish an existing building on this land so it could construct a new building.
4. Construction of Building B on the newly acquired land began on October 1, 2025. By September 30, 2026, Kohlbeck had paid $320,000 of the estimated total construction costs of $450,000. It is estimated that the building will be completed and occupied by July 2027.
5. Certain equipment was donated to the corporation by a local university. An independent appraisal of the equipment when donated placed the fair value at $40,000 and the salvage value at $3,000.
6. Machinery A's total cost of $182,900 includes installation expense of $600 and normal repairs and maintenance of $14,900. Salvage value is estimated at $6,000. Machinery A was sold on February 1, 2026.
7. On October 1, 2025, Machinery B was acquired with a down payment of $5,740 and the remaining payments to be made in 11 annual installments of $6,000 each beginning October 1, 2025. The prevailing interest rate was 8%. The following data were abstracted from present value tables (rounded).

Present Value of $1.00 at 8%		Present Value of an Ordinary Annuity of $1.00 at 8%	
10 years	.463	10 years	6.710
11 years	.429	11 years	7.139
15 years	.315	15 years	8.559

Instructions

For each numbered item on the schedule, supply the correct amount. (Round each answer to the nearest dollar.)

P10.11 (LO 1) (Depreciation for Partial Periods—SL, ACT, SYD, and DDB) On January 1, 2023, a machine was purchased for $90,000. The machine has an estimated salvage value of $6,000 and an estimated useful life of 5 years. The machine can operate for 100,000 hours before it needs to be replaced. The company closed its books on December 31 and operates the machine as follows: 2023, 20,000 hours; 2024, 25,000 hours; 2025, 15,000 hours; 2026, 30,000 hours; and 2027, 10,000 hours.

Instructions

a. Compute the annual depreciation charges over the machine's life assuming a December 31 year-end for each of the following depreciation methods.

1. Straight-line method.
2. Activity method.
3. Sum-of-the-years'-digits method.
4. Double-declining-balance method.

b. Assume a fiscal year-end of September 30. Compute the annual depreciation charges over the asset's life applying each of the following methods.

1. Straight-line method.
2. Sum-of-the-years'-digits method.
3. Double-declining-balance method.

***P10.12 (LO 1, 5) Groupwork (Depreciation—SL, DDB, SYD, ACT, and MACRS)** On January 1, 2024, Locke Company, a small machine-tool manufacturer, acquired for $1,260,000 a piece of new industrial equipment. The new equipment had a useful life of 5 years, and the salvage value was estimated to be $60,000. Locke estimates that the new equipment can produce 12,000 machine tools in its first year. It estimates that production will decline by 1,000 units per year over the remaining useful life of the equipment.

The following depreciation methods may be used: (1) straight-line, (2) double-declining-balance, (3) sum-of-the-years'-digits, and (4) units-of-output. For tax purposes, the class life is 7 years. Use the MACRS tables for computing depreciation.

Instructions

a. Which depreciation method would maximize net income for financial statement reporting for the 3-year period ending December 31, 2026? Prepare a schedule showing the amount of accumulated depreciation at December 31, 2026, under the method selected. Ignore present value, income tax, and deferred income tax considerations.

b. Which depreciation method (MACRS or optional straight-line) would minimize taxable income for the 3-year period ending December 31, 2026? Determine the amount of accumulated depreciation at December 31, 2026. Ignore present value considerations.

(AICPA adapted)

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ10.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What descriptions are used by P&G in its balance sheet to classify its property, plant, and equipment?

b. What method or methods of depreciation does P&G use to depreciate its property, plant, and equipment?

c. Over what estimated useful lives does P&G depreciate its property, plant, and equipment?

d. What amounts for depreciation and amortization expense did P&G charge to its income statement in 2020, 2019, and 2018?

e. What were the capital expenditures for property, plant, and equipment made by P&G in 2020, 2019, and 2018?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo., Inc.

UYJ10.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What amount is reported in the balance sheets as property, plant, and equipment (net) of Coca-Cola at December 31, 2020, and of PepsiCo at December 31, 2020? What percentage of total assets is invested in property, plant, and equipment by each company?

b. What depreciation methods are used by Coca-Cola and PepsiCo for property, plant, and equipment? How much depreciation and amortization was reported by Coca-Cola and PepsiCo in 2020? In 2019? (Use cash flow statement amounts.)

c. Compute and compare the following ratios for Coca-Cola and PepsiCo for 2020.

1. Asset turnover.

2. Profit margin on sales.

3. Return on assets.

d. What amount was spent in 2020 for capital expenditures by Coca-Cola and PepsiCo?

Financial Statement Analysis Case: McDonald's Corporation

UYJ10.3 **McDonald's** is the largest and best-known global food-service retailer, with more than 32,000 restaurants in over 115 countries. On any day, McDonald's serves approximately 1% of the world's population. The following is information related to McDonald's property and equipment.

Summary of Significant Accounting Policies Section

Property and Equipment. Property and equipment are stated at cost, with depreciation and amortization provided using the straight-line method over the following estimated useful lives: buildings—up to 40 years; leasehold improvements—the lesser of useful lives of assets or lease terms, which generally include option periods; and equipment—three to 12 years.

Property and Equipment

Net property and equipment consisted of:

	December 31	
(In millions)	**2020**	**2019**
Land	$ 6,349.1	$ 6,026.4
Buildings and improvements on owned land	18,218.9	17,003.7
Buildings and improvements on leased land	13,364.5	12,605.9
Equipment, signs and seating	3,119.0	2,994.5
Other	425.0	420.4
	41,476.5	39,050.9
Accumulated depreciation and amortization	(16,518.3)	(14,890.9)
Net property and equipment	$ 24,958.2	$24,160.0

Depreciation and amortization expense for property and equipment was (in millions): 2020—$1,469.4; 2019—$1,392.2; 2018—$1,302.9.

(in millions)	**2020**	**2019**	**2018**
Cash provided by operations	$6,265.2	$8,122.1	$6,966.7
Capital expenditures	1,640.8	2,393.7	2,741.7

Instructions

a. What method of depreciation does McDonald's use?

b. Does depreciation and amortization expense cause cash flow from operations to increase? Explain.

c. What does the schedule of cash flow measures indicate?

Accounting, Analysis, and Principles

UYJ10.4 Electroboy Enterprises, Inc. operates several stores throughout the western United States. As part of an operational and financial reporting review in a response to a downturn in its markets, the company's management has decided to perform an impairment test on five stores (combined). The five stores' sales have declined due to aging facilities and competition from a rival that opened new stores in the same markets. Management has developed the following information concerning the five stores as of the end of fiscal 2024.

Original cost	$36 million
Accumulated depreciation	$10 million
Estimated remaining useful life	4 years
Estimated expected future annual cash flows (not discounted)	$4.0 million per year
Appropriate discount rate	5%

Accounting

a. Determine the amount of impairment loss, if any, that Electroboy should report for fiscal 2024 and the book value at which Electroboy should report the five stores on its fiscal year-end 2024 balance sheet. Assume that the cash flows occur at the end of each year.

b. Repeat part (a), but instead assume that (1) the estimated remaining useful life is 10 years, (2) the estimated annual cash flows are $2,720,000 per year, and (3) the appropriate discount rate is 6%.

Analysis

Assume that you are a financial analyst and you participate in a conference call with Electroboy management in early 2025 (before Electroboy closes the books on fiscal 2024). During the conference call, you learn that management is considering selling the five stores, but the sale won't likely be completed until the second quarter of fiscal 2025. Briefly discuss what implications this would have for Electroboy's 2024 financial statements. Assume the same facts as in part (b) above.

Principles

Electroboy management would like to know the accounting for the impaired asset in periods subsequent to the impairment. Can the assets be written back up? Briefly discuss the conceptual arguments for this accounting.

Developing Your Professional Skills

Critical-Thinking Cases

CT10.1 (LO 1) (Depreciation Basic Concepts) Burnitz Manufacturing Company was organized on January 1, 2025. During 2025, it has used in its internal reports the straight-line method of depreciating its plant assets.

On November 8, you are having a conference with Burnitz's officers to discuss the depreciation method to be used for income tax and external (GAAP) reporting. James Bryant, president of Burnitz, has suggested the use of a new method, which he feels is more suitable than the straight-line method for the needs of the company during the period of rapid expansion of production and capacity that he foresees. Following is an example in which the proposed method is applied to a fixed asset with an original cost of $248,000, an estimated useful life of 5 years, and a salvage value of approximately $8,000.

Year	Years of Life Used	Fraction Rate	Depreciation Expense	Accumulated Depreciation at End of Year	Book Value at End of Year
1	1	1/15	$ 16,000	$ 16,000	$ 232,000
2	2	2/15	32,000	48,000	200,000
3	3	3/15	48,000	96,000	152,000
4	4	4/15	64,000	160,000	88,000
5	5	5/15	80,000	240,000	8,000

The president favors the new method because he has heard that:

1. It will increase the funds recovered during the years near the end of the assets' useful lives when maintenance and replacement disbursements are high.
2. It will result in increased write-offs in later years and thereby will reduce taxes.

Instructions

a. What is the purpose of accounting for depreciation?

b. Is the president's proposal within the scope of generally accepted accounting principles? In making your decision, discuss the circumstances, if any, under which use of the method would be reasonable and those, if any, under which it would not be reasonable.

c. The president wants your advice on the following issues.

   1. Do depreciation charges recover or create funds? Explain.
   2. Assume that the Internal Revenue Service accepts the proposed depreciation method in this case. If the proposed method were used for stockholder and tax reporting purposes, how would it affect the availability of cash flows generated by operations?

CT10.2 (LO 1) Writing (Unit, Group, and Composite Depreciation) The certified public accountant is frequently called upon by management for advice regarding methods of computing depreciation. Of comparable importance, although it arises less frequently, is the question of whether the depreciation method should be based on consideration of the assets as units, as a group, or as having a composite life.

Instructions

a. Briefly describe the depreciation methods based on treating assets as (1) units and (2) a group or as having a composite life.

b. Present the arguments for and against the use of each of the two methods.

c. Describe how retirements are recorded under each of the two methods.

(AICPA adapted)

CT10.3 (LO 1) (Depreciation—Strike, Units-of-Production, Obsolescence) The following are three different and unrelated situations involving depreciation accounting. Answer the question(s) at the end of each situation.

Situation I: Recently, Broderick Company experienced a strike that affected a number of its operating plants. The controller of this company indicated that it was not appropriate to report depreciation expense during this period because the equipment did not depreciate and an improper matching of costs and revenues would result. She based her position on the following points.

1. It is inappropriate to charge the period with costs for which there are no related revenues arising from production.
2. The basic factor of depreciation in this instance is wear and tear. Because equipment was idle, no wear and tear occurred.

Instructions

Comment on the appropriateness of the controller's comments.

Situation II: Etheridge Company manufactures electrical appliances, most of which are used in homes. Company engineers have designed a new type of blender which, through the use of a few attachments, will perform more functions than any blender currently on the market. Demand for the new blender can be projected with reasonable probability. In order to make the blenders, Etheridge needs a specialized machine that is not available from outside sources. It has been decided to make such a machine in Etheridge's own plant.

Instructions

a. Discuss the effect of projected demand in units for the new blenders (which may be steady, decreasing, or increasing) on the determination of a depreciation method for the machine.

b. What other matters should be considered in determining the depreciation method? (Ignore income tax considerations.)

Situation III: Haley Paper Company operates a 300-ton-per-day kraft pulp mill and four sawmills in Wisconsin. The company is in the process of expanding its pulp mill facilities to a capacity of 1,000 tons per day and plans to replace three of its older, less efficient sawmills with an expanded facility. One of the mills to be replaced did not operate for most of 2025 (current year), and there are no plans to reopen it before the new sawmill facility becomes operational.

In reviewing the depreciation rates and in discussing the salvage values of the sawmills that were to be replaced, it was noted that if present depreciation rates were not adjusted, substantial amounts of plant costs on these three mills would not be depreciated by the time the new mill came on stream.

Instructions

What is the proper accounting for the four sawmills at the end of 2025?

CT10.4 (LO 1) Writing **(Depreciation Concepts)** As a cost accountant for San Francisco Cannery, you have been approached by Phil Perriman, canning room supervisor, about the 2025 costs charged to his department. In particular, he is concerned about the line item "depreciation." Perriman is very proud of the excellent condition of his canning room equipment. He has always been vigilant about keeping all equipment serviced and well oiled. He is sure that the huge charge to depreciation is a mistake; it does not at all reflect the cost of minimal wear and tear that the machines have experienced over the last year. He believes that the charge should be considerably lower.

The machines being depreciated are six automatic canning machines. All were put into use on January 1, 2025. Each cost $625,000, having a salvage value of $55,000 and a useful life of 12 years. San Francisco depreciates this and similar assets using double-declining-balance depreciation. Perriman has also pointed out that if you used straight-line depreciation, the charge to his department would not be so great.

Instructions

Write a memo dated January 22, 2025, to Phil Perriman to clear up his misunderstanding of the term "depreciation." Also, calculate year-1 depreciation on all machines using both methods. Explain the theoretical justification for double-declining-balance and why, in the long run, the aggregate charge to depreciation will be the same under both methods.

CT10.5 (LO 1) Ethics **(Depreciation Choice—Ethics)** Jerry Prior, Beeler Corporation's controller, is concerned that net income may be lower this year. He is afraid upper-level management might recommend cost reductions by laying off accounting staff, including him.

Prior knows that depreciation is a major expense for Beeler. The company currently uses the double-declining-balance method for both financial reporting and tax purposes, and he's thinking of selling equipment that, given its age, is primarily used when there are periodic spikes in demand. The equipment has a carrying value of $2,000,000 and a fair value of $2,180,000. The gain on the sale would be reported in the income statement. He doesn't want to highlight this method of increasing income. He thinks, "Why don't I increase the estimated useful lives and the salvage values? That will decrease depreciation expense and require less extensive disclosure, since the changes are accounted for prospectively. I may be able to save my job and those of my staff."

Instructions

Answer the following questions.

a. Who are the stakeholders in this situation?

b. What are the ethical issues involved?

c. What should Prior do?

FASB Codification References

[1] FASB ASC 360-10-05. [Predecessor literature: "Accounting for the Impairment or Disposal of Long-lived Assets," *Statement of Financial Accounting Standards No. 144* (Norwalk, Conn.: 2001).]

[2] FASB ASC 360-10-50-1. [Predecessor literature: "Omnibus Opinion—1967," *Opinions of the Accounting Principles Board No. 12* (New York: AICPA, 1967), par. 5.]

[3] FASB ASC 932-235-50-1. [Predecessor literature: "Disclosures about Oil and Gas Producing Activities," *Statement of Financial Accounting Standards Board No. 69* (Stamford, Conn.: FASB, 1982).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE10.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of amortization?

b. What is the definition of impairment?

c. What is the definition of recoverable amount?

d. What are activities, as they relate to the construction of an asset?

CE10.2 Your client, Barriques Inc., is contemplating a restructuring of its operations, including the possibility of spinning off some of its assets to the original owners. However, management is unsure of the accounting for any impairment on the assets. What does the authoritative literature say about these types of impairments?

CE10.3 Your great-uncle, who is a CPA, is impressed that you are majoring in accounting. However, he believes that depreciation is something that companies do based on past practice, not on the basis of any authoritative guidance. Provide the authoritative literature to support the practice of fixed-asset depreciation.

CE10.4 What is the nature of SEC guidance concerning property, plant, and equipment disclosures?

Codification Research Case

Matt Holmes recently joined Klax Company as a staff accountant in the controller's office. Klax Company provides warehousing services for companies in several midwestern cities.

The location in Dubuque, Iowa, has not been performing well due to increased competition and the loss of several customers that have recently gone out of business. Matt's department manager suspects that the plant and equipment may be impaired and wonders whether those assets should be written down. Given the company's prior success, this issue has never arisen in the past, and Matt has been asked to conduct some research on this issue.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. What is the authoritative guidance for asset impairments? Briefly discuss the scope of the standard (i.e., explain the types of transactions to which the standard applies).

b. Give several examples of events that would cause an asset to be tested for impairment. Does it appear that Klax should perform an impairment test? Explain.

c. What is the best evidence of fair value? Describe alternate methods of estimating fair value.

Additional Professional Resources

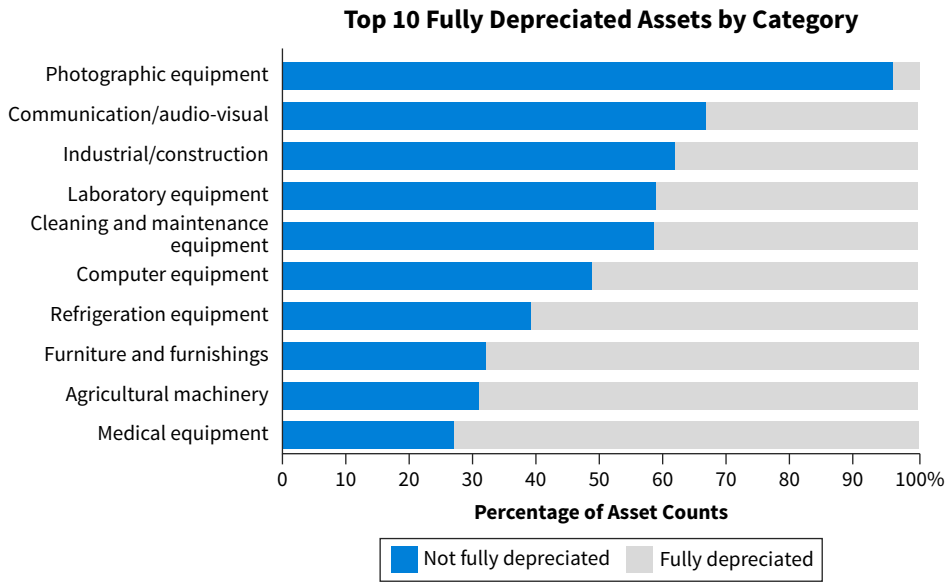
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Guide Depreciation Policies

DA10.1 A company's depreciation policies can significantly affect its financial statements. The depreciation method used, along with estimates of useful life and salvage value, will impact the rate of depreciation recorded on the income statement each reporting period. As a result, companies should evaluate their depreciation policies over time to ensure they are most accurately reporting depreciation expense and book value of property, plant, and equipment on the balance sheet.

Using data visualization tools like Tableau or Power BI can help management pull detailed financial data from the general ledger system and display it in a more user-friendly format to help with decision-making. For example, the following graph can help management evaluate useful life estimates by asset category.



Required

As an accountant at a large research university, you have been tasked with reviewing its depreciation policies to better align it with other universities. Using visualizations like the graph above, you will answer a series of multiple-choice questions about the impact of a potential change to the university's depreciation policies.

Go to Wiley Course Resources for complete details and instructions.

DA10.2 Visualization tools allow management to easily bring in financial data from the general ledger system to evaluate financial metrics. However, to get a full analysis, we need to look beyond just financial data. Visualization tools allow us to join financial data, like accumulated depreciation, with nonfinancial data, such as individual asset counts and asset categories, to expand the insights we can gain from the visualization.

Required

Using the depreciation and fixed asset visualizations from DA10.1, you will consider the impact of a change in depreciation policy on the financial statements.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Create an Asset Depreciation Report

DA10.3 It is not uncommon for official fixed asset records to be maintained outside of the general ledger. Many times, these records include thousands of individual asset items that must be maintained for reporting items like depreciation expense and property and real estate taxes. Excel can be a useful tool in maintaining these records and calculating the necessary outputs related to fixed assets.

Required

In this exercise, you will start with an Excel file that includes a large amount of raw data related to the asset register of a large university. You are tasked with calculating depreciation expense in accordance with the university's depreciation policies. You will use various tools within Excel to help you accurately calculate the amount of expense.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 6

Compare the accounting for property, plant, and equipment under GAAP and IFRS.

GAAP adheres to many of the same principles of IFRS in the accounting for property, plant, and equipment. Major differences relate to use of component depreciation, impairments, and revaluations. Following are the key similarities and differences between GAAP and IFRS related to property, plant, and equipment.

Similarities

- The definition of property, plant, and equipment is essentially the same under GAAP and IFRS.
- Under both GAAP and IFRS, changes in depreciation method and changes in useful life are treated in the current and future periods. Prior periods are not affected.
- The accounting for plant asset disposals is the same under GAAP and IFRS.
- The accounting for the initial costs to acquire natural resources is similar under GAAP and IFRS.
- Under both GAAP and IFRS, interest costs incurred during construction must be capitalized. Recently, IFRS converged to GAAP.
- The accounting for exchanges of non-monetary assets is essentially the same between IFRS and GAAP. GAAP requires that gains on exchanges of non-monetary assets be recognized if the exchange has commercial substance. This is the same framework used in IFRS.
- GAAP and IFRS both view depreciation as allocation of cost over an asset's life. GAAP permits the same depreciation methods (straight-line, diminishing-balance, units-of-production) as IFRS.

Differences

- IFRS requires component depreciation. Under GAAP, component depreciation is permitted but is rarely used.
- Under IFRS, companies can use either the historical cost model or the revaluation model. GAAP does not permit revaluations of property, plant, and equipment or mineral resources.
- In testing for impairments of long-lived assets, GAAP uses a different model than IFRS to test for impairments. As long as future undiscounted cash flows exceed the carrying amount of the asset, no impairment is recorded. The IFRS impairment test is stricter. However, unlike GAAP, reversals of impairment losses are permitted.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 11

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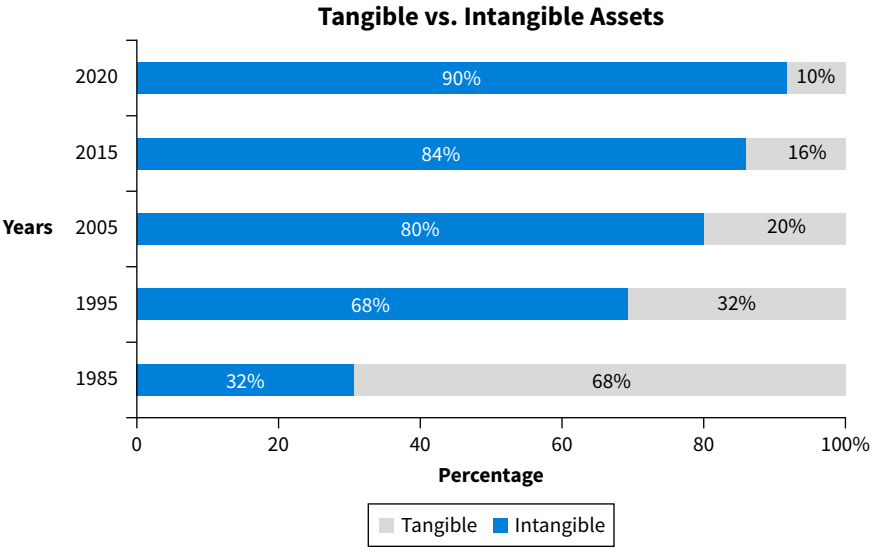
Intangible Assets

WHAT are intangible assets?

Intangible assets derive their value from the rights and privileges granted to the company, including such items as brands, licenses, franchises, patents, other intellectual property, and goodwill. Unlike assets such as property, plant, and equipment, intangible assets lack physical existence. In many cases, intangible assets do not even appear on company balance sheets.



Source: Aran Ali, "The Soaring Value of Intangible Assets in the S&P 500," *visualcapitalist.com* (November 12, 2020).

WHY is information about intangible assets important?

We need to look no further than data on the relative contribution of intangible assets to company values to see the importance of information on intangible assets to investors and creditors. As shown in the adjacent chart, intangible assets currently account for 90% of the value of companies in the S&P 500 (or over $21 trillion!). Not only is this an historical high, it also shows just how prevalent technology has become in our lives.

The growing importance of intangibles is also revealed by a comparison of the five largest companies worldwide today versus 35 years ago, as shown in the the comparison to the left. In the past (in 1985), the largest companies (e.g., **ExxonMobil**, **GE**, and **Chevron**) held significant tangible assets (more than 50%). Most recently (in 2020), the top five are dominated by tech companies (e.g., **Apple**, **Microsoft**, and **Meta Platforms** (previously **Facebook**) for which intangible assets contribute more than 80% of company value. Clearly, investors and creditors need good information on these assets, which are critical to generating future cash flows.

1985	2020
• IBM	• Apple
• ExxonMobil	• Microsoft
• GE	• Amazon
• Schlumberger	• Alphabet
• Chevron	• Meta Platforms

HOW do we account for intangible assets?

In general, intangible assets provide benefits over a period of years. Therefore, companies normally classify them as long-term assets, with accounting that is similar to long-lived tangible assets. Intangible asset accounting varies depending on whether the intangible asset has a limited or indefinite life.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 11.1 Discuss the characteristics, valuation, and amortization of intangible assets.	**11.1 Intangible Asset Issues** • Characteristics • Valuation • Accounting	Examples **11.1** Amortization of a License **11.2** Amortization of a Brand **11.3** Impairment of a Patent **11.4** Accounting for a Trademark **11.5** Impairment of a License Put It into Practice **LO 11.1** Record Intangibles and Impairments
LO 11.2 Discuss the accounting and financial statement presentation for various types of intangible assets.	**11.2 Types and Presentation of Intangibles** • Marketing-related • Customer-related • Artistic-related • Contract-related • Technology-related • Presentation	Examples **11.6** Trademark **11.7** Customer List **11.8** Residual Value—Customer List **11.9** Copyright **11.10** Broadcast License **11.11** Patent Put It into Practice **LO 11.2** Account for Various Types of Intangibles
LO 11.3 Explain the accounting issues for recording goodwill.	**11.3 Goodwill** • Recording • Impairment • Bargain purchase • Presentation	Examples **11.12** Goodwill Impairment **11.13** Bargain Purchase Put It into Practice **LO 11.3** Account for Goodwill
LO 11.4 Describe the accounting and presentation for research and development and similar costs.	**11.4 Research and Development Costs** • Identifying R&D • Accounting for R&D • Similar costs • Presentation	Examples **11.14** Start-Up Costs **11.15** Initial Operating Losses

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

11.1 Intangible Asset Issues

LEARNING OBJECTIVE 1

Discuss the characteristics, valuation, and amortization of intangible assets.

Characteristics

Gap Inc.'s most important asset is its brand image, not its store fixtures. **The Coca-Cola Company**'s success comes from its secret formula for making Coca-Cola, not its plant facilities. **Amazon Prime**'s subscriber base, not its warehouses, provides its most important asset. The U.S. economy is dominated by information and service providers. For these companies, their major assets are often intangible in nature.

What exactly are intangible assets? **Intangible assets** have two main characteristics, as follows. **[1]** (See the FASB Codification References near the end of the chapter.)

1. **They lack physical existence.** Tangible assets such as property, plant, and equipment have physical form. Intangible assets, in contrast, derive their value from the rights and privileges granted to the company using them. For most intangible assets, the only evidence of their existence is a document showing the company was granted a patent, copyright, or trademark from the government.
2. **They are not financial instruments.** Assets such as bank deposits, accounts receivable, and long-term investments in bonds and stocks also lack physical substance. However, financial instruments derive their value from the right (claim) to receive cash or cash equivalents in the future. Financial instruments are not classified as intangibles.

In most cases, intangible assets provide benefits over a period of years. Therefore, companies normally classify them as long-term assets.

Valuation

Over the years, the valuation of intangible assets has been controversial in the business world. Consider these two examples:

Universal Music Group (UMG)

- Purchased the copyrights to all of Bob Dylan's music for about $300 million.
- Cost included the purchase price, legal fees, and other transaction costs.
- **Recorded as an intangible asset on the balance sheet.**

Alphabet (parent of **Google**)

- Spent over $27 billion on research and development (R&D).
- This spending is to develop and design new services and technology or enhance existing services and technology.
- **Recorded as R&D expense on the income statement.**

Why the difference in the two approaches? UMG records an intangible asset for Dylan's music because it can trace the expected cash flows that it will achieve from making this expenditure.

Therefore, companies **record at cost** intangibles purchased from another party. Cost includes all acquisition costs plus expenditures to make the intangible asset ready for its intended use. Typical costs include purchase price, legal fees, and other incidental expenses. Sometimes companies acquire intangibles in exchange for stock or other assets. In such cases, **the cost of the intangible is the fair value of the consideration given or the fair value**

of the intangible received, whichever is more clearly evident. Essentially, the accounting treatment for purchased intangibles closely parallels that for purchased tangible assets.[1]

Alphabet (parent of Google), however, has a great deal more uncertainty about the future potential of its research and development expenditures. Specifically:

- Costs incurred internally to create intangibles often bear no relationship to the intangibles' real value.
- It is often difficult to associate internal costs with a specific intangible.

As a result, GAAP requires that companies can only capitalize direct costs such as the purchase price and related transaction costs related to the purchase. Costs incurred internally generally are expensed as incurred (see **Underlying Concepts**).

Underlying Concepts

The controversy surrounding the accounting for R&D expenditures reflects a debate about whether costs incurred internally, such as R&D, meet the definition of an asset as established in the Conceptual Framework. If they do not, an "expense all R&D costs" policy results in overstated expenses and understated assets.

Accounting for Intangibles

Intangible assets can be further classified into the two categories of **limited-life (finite) intangibles** and **indefinite-life intangibles**. The accounting is slightly different for these two categories, so let's take a deeper dive into each one.

Limited-Life Intangibles

The cost of a limited-life intangible is amortized to expense over its useful life. The useful life should reflect the periods over which the asset will contribute to cash flows. A company, like **Disney**, considers these factors in determining useful life of its intangible assets.

1. The expected use of the asset by the company.
2. The expected useful life of another asset or a group of assets to which the useful life of the intangible asset may relate (such as studios and production facilities).
3. Any legal, regulatory, or contractual provisions that may limit the useful life.
4. Any provisions (legal, regulatory, or contractual) that enable renewal or extension of the asset's legal or contractual life without substantial cost. This factor assumes that there is evidence to support renewal or extension. Disney also must be able to accomplish renewal or extension without material modifications of the existing terms and conditions.
5. The effects of obsolescence, demand, competition, and other economic factors. Examples include the stability of the industry, known technological advances, legislative action that results in an uncertain or changing regulatory environment, and expected changes in distribution channels.
6. The level of maintenance expenditures required to obtain the expected future cash flows from the asset. For example, if significant investments are required to maintain a technology patent, that may suggest a very limited useful life. **[2]**

The amount of amortization expense for a limited-life intangible asset should report the pattern in which the company consumes or uses up the asset, if the company can reliably determine that pattern. If a pattern of use cannot be determined, then a company uses the straight-line method. (*For homework problems, assume the use of the straight-line method unless stated otherwise.*)

[1] What if a company buys several intangibles, or a combination of intangibles and tangibles? In such a basket purchase, the company should allocate the cost on the basis of fair values. The accounting in this section relates to the acquisition of a single asset or group of assets. The accounting for intangible assets acquired in a **business combination** (transaction in which the purchaser obtains control of one or more businesses) is discussed later in this chapter.

Example 11.1 Amortization of a License

FACTS Second Wave, Inc. purchases a license to provide a specified quantity of a gene product called Mega. Second Wave should amortize the cost of the license following the pattern of use of Mega. If Second Wave's license calls for it to provide 30% of the total the first year, 20% the second year, and 10% per year until the license expires, it would amortize the license cost using that pattern.

QUESTION If the cost of Mega is $1,000,000, what is the amount of amortization expense reported in the first and second year? Prepare journal entries to record the purchase and the amortization in the first and second years.

SOLUTION

To record purchase of intangible asset:

Licenses	1,000,000	
Cash		1,000,000

To record first year amortization:

Amortization Expense ($1,000,000 × .30)	300,000	
Licenses		300,000

To record second year amortization:

Amortization Expense ($1,000,000 × .20)	200,000	
Licenses		200,000

At the end of the second year, the balance in the intangible asset account is $500,000. Note that when amortizing intangible assets, companies typically credit the asset directly instead of crediting an accumulated amortization account. *For homework problems, credit the asset account directly.*

The amount of an intangible asset to be amortized over its useful life should be its cost less any residual value. The residual value is assumed to be zero unless at the end of its useful life the intangible has value to another company.

Example 11.2 Amortization of a Brand

FACTS U2D Co. has an intangible asset of $400,000 related to its RealSoap brand name, which it sells to wholesalers. The brand has an estimated useful life of 10 years. One of U2D's wholesalers, Hadley Company, commits to purchasing this brand name for $160,000 at the end of 8 years.

QUESTION How should you record the amortization of the RealSoap brand in the first year?

SOLUTION

The computation of the amortization in the first year is $30,000 [($400,000 − $160,000) ÷ 8]. U2D reduces the cost of the intangible by its residual value for purposes of amortizing the Brand. Since U2D will be selling the asset at the end of 8 years, it uses 8 years as the useful life rather than 10 years. The entry to record amortization of the RealSoap brand at the end the first year is as follows.

Amortization Expense	30,000	
Brand (or Accumulated Amortization)		30,000

What happens if the legal or economic life of a limited-life intangible asset changes? In that case, the remaining carrying amount should be amortized over the revised remaining useful life. Companies should, on a regular basis, evaluate the limited-life intangibles for **impairment**.

Impairment of Limited-Life Intangibles

The rules that apply to impairments of property, plant, and equipment (Chapter 10) also apply to limited-life intangibles. A company should review limited-life intangibles for **impairment** at certain points, specifically whenever events or changes in circumstances

indicate that the carrying amount of the asset may not be recoverable. Recall the two-step process for determining if there is an impairment:

1. **Recoverability test**. The company estimates the future cash flows (undiscounted) expected from the use of the asset and its eventual disposal, then makes the following comparison and conclusions.

   - If the sum of expected future cash flows is **greater than** the carrying value of the intangible asset, **there is no impairment**.
   - If the sum of expected future cash flows is **less than** the carrying value of the intangible asset, **there is an impairment loss**.

   If the conclusion is impairment, the company continues to the fair value test.

2. **Fair value test**. If the intangible asset is impaired, the impairment amount is calculated as follows.

Carrying Value of Intangible Asset – **Fair Value of Intangible Asset** = **Impairment Loss**

As with other impairments, the loss on the limited-life intangible is reported as part of income from continuing operations. The loss is generally reported in the "Other expenses and losses" section of the income statement.

Example 11.3 Impairment of a Patent

FACTS LightHouse Inc. has a patent on programmable home-lighting systems. Unfortunately, advances in Smart Home technology adversely affected the demand for its programmable systems. Thus, the patent has provided little income to date. As a result, LightHouse performs a recoverability test. It finds that the expected future net cash flows from this patent are $35 million. The present value of the expected cash flows is $20 million. LightHouse's patent has a carrying amount of $60 million.

QUESTION How would you compute the impairment loss, and what is the journal entry to record this loss?

SOLUTION

LightHouse first performs the recoverability test as follows.

Sum of expected future cash flows		Carrying value of intangible asset
$35 million	<	$60 million

Because the expected future net cash flows of $35 million are less than the carrying amount of $60 million, LightHouse has an impairment loss. The present value of the expected cash flows is the fair value of the intangible asset, which is used to determine the impairment loss as follows.

Carrying amount of patent	$60,000,000
Less: Fair value (based on present value computation)	20,000,000
Loss on impairment	$40,000,000

LightHouse records this loss as follows.

Loss on Impairment	40,000,000	
Patents		40,000,000

In Example 11.3, after recognizing the impairment, the reduced carrying amount of the patent ($20 million) is its new cost. LightHouse should amortize the patent's new cost basis over its remaining useful life or legal life, whichever is shorter. Even if demand for its lighting system increases in subsequent periods and the value of the patent increases, LightHouse **may not restore the previously recognized impairment loss.**

Indefinite-Life Intangibles

If no factors (legal, regulatory, contractual, competitive, or other) limit the useful life of an intangible asset, a company considers its useful life indefinite. An **indefinite life** means that there is no foreseeable limit on the period of time over which the intangible asset is expected to provide cash flows. Therefore, a company **does not amortize** an intangible asset with an indefinite life.

Example 11.4 Accounting for a Trademark (Indefinite-Life)

FACTS Double Clik Inc. acquired a trademark that it uses to distinguish a leading consumer product. It renews the trademark every 10 years. All evidence indicates that this trademarked product will generate cash flows for an indefinite period of time.

QUESTION How should Double Clik account for the trademark?

SOLUTION

In this case, the trademark has an indefinite life. Double Clik does not record any amortization.

Accounting Matters — Crypto at Cost?

Companies like **Tesla** and **MicroStrategy** are using excess cash to purchase Bitcoin as a way to diversify cash holdings and maximize returns. What do you think? Should Bitcoin be accounted for like cash?

Current accounting for cryptocurrencies like Bitcoin is more aligned with that of an intangible asset instead of a financial instrument. As a result, investments in digital currencies must be carried on the balance sheet at cost and written-down if deemed impaired.

Volatility can be common with digital currencies, but current accounting rules do not permit write-ups on the value of an intangible that had previously been written-down. This could be confusing for investors and may lead to increased non-GAAP disclosures around cryptocurrencies.

Source: Michael Cohn, "Companies Investing in Crypto May Be in for a Rude Accounting Surprise," *Accounting Today* (February 25, 2021).

Impairment of Indefinite-Life Intangibles

Companies should test indefinite-life intangibles for impairment at least annually. The impairment test for an indefinite-life intangible asset is a **fair value test** as follows.

- If the carrying value of intangible assets is **less than** the fair value of the intangible asset, **there is no impairment**.
- If the carrying value of intangible assets is **greater than** the fair value of the intangible asset, **there is an impairment loss**.

Unlike the two-step approach for limited-life intangible assets, companies use this one-step test because **many indefinite-life assets might never fail the recoverability test,** as cash flows may extend many years into the future.

Example 11.5 Impairment of a License (Indefinite-Life)

FACTS Arcon Radio purchased a broadcast license for $2,000,000. The license is renewable every 10 years if the company provides appropriate service and does not violate Federal Communications Commission (FCC) rules. Arcon has renewed the license with the FCC twice, at a minimal cost. Because it expects cash flows to last indefinitely, Arcon reports the license as an indefinite-life intangible asset.

Recently, the FCC decided to auction significantly more of these licenses. As a result, Arcon expects reduced cash flows for the remaining 2 years of its existing license. Arcon performs a fair value test for this indefinite-life intangible and determines that the fair value of the intangible asset is $1,500,000.

QUESTION Is Arcon's license impaired? If so, what is the amount of the impairment and the related journal entry?

SOLUTION

The license is impaired, as indicated by the following computation.

Carrying value of broadcast license	$ 2,000,000
Fair value less costs to sell	(1,500,000)
Loss on impairment	$ 500,000

The entry to record the loss is as follows.

Loss on Impairment	500,000	
Licenses		500,000

Arcon Radio now reports the license at $1,500,000, its fair value. Even if the value of the license increases in the remaining two years, Arcon may not restore the previously recognized impairment loss.

What are some indicators that an indefinite-life intangible asset might be impaired? Companies may do an optional qualitative assessment to determine whether it is more likely than not (i.e., a likelihood of more than 50%) that an indefinite-life intangible asset is impaired. [3] Factors considered in this assessment may include:

- Deterioration of general economic conditions.
- Increased competitive environment.
- Change in the market for a company's products or services.
- Regulatory or political developments.
- Overall financial performance such as negative or declining cash flows.

If the qualitative assessment indicates that the asset is not impaired, **the company need not continue with the fair value test**. As a result, use of the qualitative assessment should reduce both the cost and complexity of performing the impairment test.

Illustration 11.1 summarizes the accounting treatment for intangible assets.

ILLUSTRATION 11.1 Accounting Treatment for Intangibles

	Manner Acquired			
Type of Intangible	**Purchased**	**Internally Created**	**Amortization**	**Impairment Test**
Limited-life intangibles	Capitalize	Expense*	Over useful life	Recoverability test and then fair value test
Indefinite-life intangibles	Capitalize	Expense*	Do not amortize	Fair value test only

*Except for direct costs, such as legal costs.

Accounting Matters

Purchase or Develop?

As indicated in Illustration 11.1, the accounting for intangible assets depends on whether the intangible is purchased or whether it is developed internally. This is the case for **The Coca-Cola Company**. Its brand value is estimated to be worth about $69.7 billion, but its balance sheet values its "trademarks with indefinite-lives" (i.e., brands) at just $6.7 billion. As you are learning in this chapter, this reporting results because the accounting rules prohibit companies from recognizing brands and many other "intangible" assets if they created them internally.

In contrast, when **Procter & Gamble (P&G)** acquired **Gillette**, it realized an additional $24 billion in intangible assets on its balance sheet. That is, P&G paid $57 billion for Gillette and estimated the Gillette brand value to be worth $24 billion of the total paid.

Sources: "Untouchable Intangibles: Sometimes You See Brands on the Balance Sheet, Sometimes You Don't," *The Economist* (August 30, 2014); and Baruch Lev and Feng Gu, *The End of Accounting* (Hoboken, N.J.: John Wiley & Sons, 2016).

Put It into Practice LO 11.1
Record Intangibles and Impairments

FACTS Pershing Company, organized in 2024, has the following transactions related to intangible assets in 2025.

1/2/25	Purchased patent (8-year life)	$320,000
4/1/25	Secured a trademark (indefinite life)	60,000
7/1/25	Purchased license with 10-year life; expiration date 7/1/35	250,000
		$630,000

INSTRUCTIONS

a. Prepare the entries as of December 31, 2025, recording any necessary amortization. (Use straight-line amortization.)

b. At December 31, 2025, recoverability of the intangible assets appears assured, except that new competition has raised concerns about the value of the patent. Pershing estimates expected (undiscounted) cash flows on the patent to be $270,000, and the fair value of the patent is estimated to be $250,000. Pershing estimates the trademark to have a fair value of $75,000 and the license to have a fair vale of $260,000. Prepare necessary entries for impairments.

c. Indicate the intangible asset balances to be reported in the balance sheet at December 31, 2025.

SOLUTION

Patents

Beg. bal.	320,000		
		(a)	40,000
	280,000		
		(b)	30,000
End. bal.	250,000		

Licenses

Beg. bal.	250,000		
		(a)	12,500
End. bal.	237,500		

a. To record amortization on limited-life intangibles:

December 31, 2025

Amortization Expense	52,500	
Patents ($320,000 ÷ 8)		40,000
Licenses [($250,000 ÷ 10) × 1/2]		12,500

b. There is no impairment on the trademark or the license, as the fair value is greater than the carrying value.

For the patent, the analysis at December 31, 2025, is as follows.

1. Recoverability test:
Because the sum of the expected future cash flows ($270,000) is less than the carrying value of the patent ($280,000), the patent is impaired.

2. Computation of the impairment loss:
The carrying value of the patent ($280,000), minus the fair value of the patent ($250,000), equals a loss of $30,000.

To record the impairment loss:

Impairment Loss	30,000	
Patents		30,000

c. Balance of intangible assets as of December 31, 2025:

Patents	$250,000
Trademarks (no amortization)	60,000
Licenses ($250,000 − $12,500)	237,500

11.2 Types and Presentation of Intangible Assets

LEARNING OBJECTIVE 2

Discuss the accounting and financial statement presentation for various types of intangible assets.

As indicated, the accounting for intangible assets depends on whether the intangible has a limited or an indefinite life. There are many different types of intangibles, often classified into the following five major categories. [4]

1. Marketing-related intangible assets.
2. Customer-related intangible assets.
3. Artistic-related intangible assets.
4. Contract-related intangible assets.
5. Technology-related intangible assets.

Marketing-Related Intangible Assets

Companies primarily use **marketing-related intangible assets** in the marketing or promotion of products or services. Examples are trademarks or trade names, Internet domain names, and noncompetition agreements.

A **trademark** or **trade name** is a word, phrase, or symbol that distinguishes or identifies a particular company or product. Trade names like Kleenex, Pepsi-Cola, Buick, Tylenol, Wheaties, and Sunkist create immediate product identification in our minds, thereby enhancing marketability. The right to use a trademark or trade name, whether registered or not, rests exclusively with the original user as long as the original user continues to use it.

Registration with the U.S. Patent and Trademark Office provides legal protection for an **indefinite number of renewals for periods of 10 years each**. Therefore, a company that uses an established trademark or trade name may properly consider it to have an indefinite life and does not amortize its cost.

- If a company buys a trademark or trade name, it capitalizes the purchase price as the cost of the asset.
- If a company develops a trademark or trade name, it capitalizes costs related to securing it, such as attorney fees, registration fees, design costs, consulting fees, and successful legal defense costs. However, it excludes research and development costs.
- When the total cost of a trademark or trade name is insignificant, a company simply expenses it.

Example 11.6
Trademark

FACTS Hatley Company acquired a trademark, which cost $3 million, that will help the company to better identify and distinguish one of its consumer products in the market. The trademark has a remaining life of 8 years and is renewable at a minor cost every 10 years. Numerous internal studies have indicated that this trademark will provide substantial cash flows to Hatley for an indefinite period.

QUESTION What entries do you believe Hatley should make in the first year?

SOLUTION

Hatley should record the purchase of the trademark as follows.

Trademarks	3,000,000	
Cash		3,000,000

Given the information provided, the trademark should be considered to have an indefinite life and therefore should not be amortized. The trademark should be tested for impairment yearly using the fair value test.

The value of a marketing-related intangible can be substantial. Consider Internet **domain names**. The name **Drugs.com** at one time sold for $800,000. The bidding for the name **Loans.com** approached $500,000. An expansion of domain names will allow industries to use terms like .cars or even Internet slang like lol. This expansion has led to a new wave of domain name activity. Companies can register their own domain names. Applications

received include company names (such as **Microsoft**, which would have the name .microsoft) and for city-based domains (such as .nyc and .berlin).

Customer-Related Intangible Assets

Customer-related intangible assets result from interactions with outside parties. Examples include customer lists, order or production backlogs, and both contractual and noncontractual customer relationships.

Example 11.7 Customer List

FACTS Green Market Inc. acquires the customer list of a large newspaper for $6,000,000 on January 1, 2025. This customer database includes names, contact information, order history, and demographic information. Green Market expects to benefit from the information evenly over a 3-year period.

QUESTION What journal entries would you make to record the purchase of the customer list in the first year and the amortization over the 3-year period?

SOLUTION

In this case, the customer list is a limited-life intangible that Green Market should amortize on a straight-line basis. Green Market records the purchase of the customer list and the amortization of the customer list at the end of each year as follows.

To record purchase of customer list (January 1, 2025):

Customer List	6,000,000	
Cash		6,000,000

To record amortization expense (December 31, 2025, 2026, 2027):

Amortization Expense ($6,000,000 ÷ 3)	2,000,000	
Customer List (or Accumulated Amortization)		2,000,000

As indicated, the customer list has a limited life. Therefore, it should be tested for impairment when there are impairment indicators, using the recovery test and then the fair value test.

Example 11.8 Residual Value—Customer List

FACTS Refer to the facts for Green Market Inc. in Example 11.7. Assume now that Green Market determines that it can sell the list for $60,000 to another company at the end of 3 years.

QUESTION What amount of amortization should be recorded for the customer list in this situation?

SOLUTION

Amortization expense would be $1,980,000, as follows.

Cost	$6,000,000
Less: Residual value	60,000
Amortization base	$5,940,000

Amortization expense per period: $1,980,000 ($5,940,000 ÷ 3)

Companies should assume a zero residual value unless the asset's useful life is less than the economic life and reliable evidence is available concerning the residual value. [5]

Artistic-Related Intangible Assets

Artistic-related intangible assets involve ownership rights to plays, literary works, musical works, pictures, photographs, and video and audiovisual material. Copyrights protect these ownership rights. A **copyright** is a federally granted right that all authors, painters,

musicians, sculptors, and other artists have in their creations and expressions. A copyright is granted for the **life of the creator plus 70 years**. It gives the owner or heirs the exclusive right to reproduce and sell an artistic or published work.

Copyrights, while not renewable, can be valuable. At one time, **Disney** faced the loss of its copyright on Mickey Mouse, which could have affected sales of billions of dollars of Mickey-related goods and services (including theme parks). This copyright was so important that Disney and many other big entertainment companies fought all the way to the Supreme Court—and won an extension of copyright lives from 50 to 70 years.

As another example, **Really Useful Group** owns copyrights on the musicals of Andrew Lloyd Webber—*Cats, Phantom of the Opera, Jesus Christ Superstar*, and others. The company has little in the way of tangible assets, yet analysts value it at over $300 million.

- Companies capitalize the costs of acquiring and defending a copyright.
- They amortize any capitalized costs over the useful life of the copyright if less than its legal life (life of the creator plus 70 years).

For example, Really Useful Group should allocate the costs of its copyrights to the years in which it expects to receive the benefits. The difficulty of determining the number of years over which it will receive benefits typically encourages a company like Really Useful Group to write off these costs over a fairly short period of time. Companies must expense the research and development costs that lead to a copyright as those costs are incurred.

Example 11.9
Copyright

FACTS Alozo Inc. purchases a copyright for $500,000, which has a remaining legal life of 40 years. An examination of future cash flows related to this copyright indicates that it will have a useful life of 25 years.

QUESTION What journal entry would you make to record the purchase and over what period would you amortize the copyright?

SOLUTION

The journal entry to record the copyright is as follows.

Copyrights	500,000	
Cash		500,000

As it has a limited-life, the copyright is amortized over 25 years and would be tested for impairment if there are impairment indicators. If the carrying amount of the copyright is not recoverable, then the impairment is measured based on a fair value test.

Contract-Related Intangible Assets

Contract-related intangible assets represent the value of rights that arise from contractual arrangements. Examples are franchise and licensing agreements, construction permits, broadcast rights, and service or supply contracts.

A **franchise** is a contractual arrangement under which the franchisor grants the franchisee the right to sell certain products or services, to use certain trademarks or trade names, or to perform certain functions, usually within a designated geographical area. When you purchase a Prius from a **Toyota** dealer, fill up your tank at the corner **Shell** station, eat lunch at **Subway**, or make reservations at a **Marriott** hotel, you are dealing with franchises.

The franchisor, having developed a unique concept or product, protects its concept or product through a patent, copyright, or trademark or trade name. The franchisee acquires the right to exploit the franchisor's idea or product by signing a franchise agreement.

Another type of franchise, granted by a governmental body, permits the business to use public property in performing its services. Examples are the use of city streets for a bus line or taxi service; the use of public land for telephone, electric, and cable television lines; and the use of airwaves for radio or TV broadcasting. Such operating rights are referred to as **licenses** or **permits**. For example, **Fox**, **CBS**, and **NBC** agreed at one time to pay $27.9 billion for the right to broadcast **NFL** football games over an eight-year period.

Franchises and licenses may be for a definite period of time, for an indefinite period of time, or perpetual.

- The company securing the franchise or license carries an intangible asset account (entitled Franchises or Licenses) on its books, only when it can identify costs with the acquisition of the operating right. (Such costs might be legal fees or an advance lump-sum payment, for example.)
- **A company should amortize the cost of a franchise (or license) with a limited life as an operating expense over the life of the franchise.**
- It should not amortize a franchise with an indefinite life nor a perpetual franchise; the company should instead carry such franchises at cost and test for impairment using the fair value test.

Example 11.10
Broadcast License

FACTS WWKL acquired a broadcasting license with an 8-year term from the Federal Communications Commission. The cost of the license is $400,000. The license may be renewed indefinitely at a minimum cost. The license has been renewed three times, and recent analysis indicates that the license will continue to generate cash flows if the license is renewed.

QUESTION What journal entry would you make to record the license and over what period would you amortize the license?

SOLUTION

The journal entry to record the license is as follows.

Licenses	400,000	
Cash		400,000

The broadcast license cost is not amortized because it is expected that the cash flows will continue indefinitely. The license is tested for impairment annually using the fair value test.

Annual payments made under a franchise or license agreement should be entered as operating expenses in the period in which they are incurred. These payments do not represent an asset since they do not relate to **future rights** to use the property.

Technology-Related Intangible Assets

Technology-related intangible assets relate to innovations or technological advances. Examples are patented technology and trade secrets granted by the U.S. Patent and Trademark Office.

A **patent** gives the holder exclusive right to use, manufacture, and sell a product or process **for a period of 20 years** without interference or infringement by others. Companies such as **Merck** and **Xerox** were founded on patents and built on the exclusive rights thus granted.[2] The two principal kinds of patents are **product patents**, which cover actual physical products, and **process patents**, which govern the process of making products.

If a company like **Qualcomm** purchases a patent from an inventor, the purchase price represents its cost.

- A company can capitalize other costs incurred in connection with securing a patent, as well as attorney fees and other unrecovered costs of a successful legal suit to protect the patent, as part of the patent cost.
- However, it **must expense as incurred** any research and development costs related to the **development** of the product, process, or idea that it subsequently patents. (We discuss accounting for research and development costs in more detail later in this chapter.)

[2]Consider the opposite result. Sir Alexander Fleming, who discovered penicillin, decided not to use a patent to protect his discovery. He hoped that foregoing a patent would help companies produce the medication more quickly. Companies, however, refused to develop it because they did not have the patent shield and therefore were afraid to make the investment.

- Companies should amortize the cost of a patent over its legal life or its useful life (the period in which benefits are received), **whichever is shorter**.

If Qualcomm owns a patent from the date it is granted and expects the patent to be useful during its entire legal life, the company should amortize it over 20 years. If it appears that the patent will be useful for a shorter period of time, say for five years, it should amortize its cost over five years.

Changing demand, new inventions superseding old ones, inadequacy, and other factors often limit the useful life of a patent to less than the legal life. For example, the useful life of pharmaceutical patents is frequently less than the legal life because of the testing and approval period that follows their issuance. A typical drug patent has several years knocked off its 20-year legal life. Why? Because a drug-maker spends one to four years on animal tests, four to six years on human tests, and two to three years for the Food and Drug Administration (FDA) to review the tests. All this time occurs **after** issuing the patent but **before** the product goes on pharmacists' shelves.

As mentioned earlier, companies capitalize the costs of defending copyrights. The accounting treatment for a patent defense is similar. **A company charges all unrecovered legal fees and other costs incurred in successfully defending a patent suit to Patents,** an asset account. Such costs should be amortized along with acquisition cost over the remaining useful life of the patent.

Amortization expense should reflect the pattern, if reliably determined, in which a company uses up the patent.[3] A company may credit amortization of patents directly to the Patents account or to an Accumulated Amortization account.

Example 11.11 Patent

FACTS Harcott Co. incurs $180,000 in legal costs on January 1, 2025, to successfully defend a patent. The patent's useful life after defense is 12 years, to be amortized on a straight-line basis.

QUESTION How should Harcott record the legal fees and the amortization at the end of 2025?

SOLUTION

Harcott makes the following entries to record the legal fees (resulting in a patent) and their amortization.

To record legal fees related to patent (January 1, 2025):

Patents	180,000	
Cash		180,000

To record amortization of patent (December 31, 2025):

Amortization Expense ($180,000 ÷ 12)	15,000	
Patents (or Accumulated Amortization)		15,000

We've indicated that a patent's useful life should not extend beyond its legal life of 20 years. However, companies often make small modifications or additions that lead to a new patent. For example, **Astra Zeneca plc** filed for additional patents on minor modifications to its heartburn drug Prilosec. The effect may be to extend the life of the old patent. If the new patent provides essentially the same benefits, Astra Zeneca can apply the unamortized costs of the old patent to the new patent.[4] Alternatively, if a patent becomes impaired because demand drops for the product, the asset should be written-down or written-off immediately to expense.

Illustration 11.2 provides a summary of various intangible assets.

[3]Companies may compute amortization on a units-of-production basis in a manner similar to that described for depreciation on property, plant, and equipment.

[4]Another classic example is **Eli Lilly**'s drug Prozac (prescribed to treat depression). At one time, this product accounted for 43% of Eli Lilly's sales. However, when the patent on Prozac expired, the company was unable to extend its protection with a second-use patent for the use of Prozac to treat appetite disorders. Sales of the product slipped substantially as generic equivalents entered the market.

ILLUSTRATION 11.2 Intangible Asset Summary

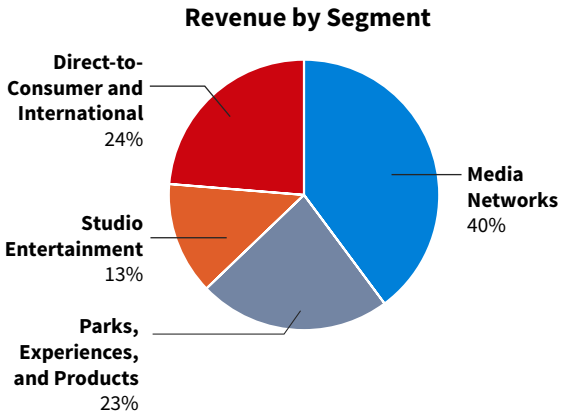
Intangible Asset Related to	Examples	Accounting
Marketing	• Trademark • Trade name—Kleenex • Internet domain name	• No amortization if treated as indefinite life
Customers	• Customer lists • Order/production backlogs • Customer relationships—both contractual and non-contractual	• Amortize over the useful life
Artistic Creations	Copyrights related to: • Music • Literary works • Art and photographs • Movies and videos	• Amortize over the useful life, which is typically shorter than the legal life
Contracts	• Franchises • Licensing agreements—use of airwaves for TV broadcasting	• Amortize if a definite life; do not amortize if indefinite life or perpetual
Technology	• Product patents—smart phones • Process patents—mixing a solution for a chemical	• Amortize over the legal life or useful life, whichever is shorter

Accounting Matters

"It Was All Started by a Mouse"

Walt Disney once said, "I hope we never lose sight of one thing—that it was all started by a mouse." And what a valuable asset Mickey Mouse is! **Disney** is known for staunchly defending its images, brands, and works of art; its business depends on it. In a recent 10-K annual report, the company indicates, "The Company's businesses throughout the world are affected by its ability to exploit and protect against infringement of its intellectual property, including trademarks, trade names, copyrights, patents and trade secrets." With over $10.6 billion in character/franchise intangibles, copyrights, and trademarks on Disney's balance sheet, it is a reasonable conclusion that a good portion of that capitalized amount comes from legal fees spent successfully defending their intangible assets.

How do these intangible assets impact Disney's financial performance? Consider the breakdown of Disney's $65 billion in annual revenue shown in the adjacent chart.



As indicated, direct-to-consumer and media network revenue account for 64% of Disney's total revenue. Certainly, the media content generating this revenue is protected by copyrights, licenses, and broadcast rights.

Parks, experiences and products accounts for 23% of Disney's revenue. Have you ever worn a pair of those adorable mouse ears? You can bet that some portion of the revenue from that sale made its way back to Disney! What makes Disney theme parks so popular? The characters with their lovable trade names and trademarked costumes? What about the patented technology and processes used to make each experience within the theme park unique and exciting?

Finally, 13% of Disney's revenue is produced by its studio entertainment segment. This segment includes motion pictures that Disney produces and copyrights. It includes the production of live entertainment events with licensed music and characters, and uses cutting-edge technology to create engaging visual experiences.

Clearly, Disney's intangible assets have a direct and impactful link to its revenue-producing ability and overall success as a company.

Presentation of Intangible Assets

The reporting of intangible assets is similar to the reporting of property, plant, and equipment. However, contra accounts are not normally shown for intangibles on the balance sheet. As **Illustration 11.3** shows, companies should report as a separate item all intangible assets (including goodwill, discussed in the next section) on the balance sheet.

ILLUSTRATION 11.3
Intangible Asset Disclosures

Harbaugh Company
Balance Sheet (partial)
(in thousands)

Intangible assets (Note C)	$3,840

Income Statement (partial)
(in thousands)

as part of Continuing operations	
Amortization expense	380
Impairment losses (goodwill)	46

Notes to the Financial Statements

Note C: Acquired Intangible Assets

	As of December 31, 2025	
	Gross Carrying Amount	Accumulated Amortization
Amortized intangible assets		
Trademark	$2,000	$ (100)
Customer list	500	(310)
Other	60	(10)
Total	$2,560	$ (420)
Unamortized intangible assets		
Licenses	$1,300	
Trademark	400	
Total	$1,700	

Types of intangibles and carrying values

Aggregate Amortization Expense	
For year ended 12/31/25	$ 380
Estimated Amortization Expense	
For year ended 12/31/26	$ 200
For year ended 12/31/27	90
For year ended 12/31/28	70
For year ended 12/31/29	60
For year ended 12/31/30	50

Current and future expense

- The FASB concluded that since intangible assets differ significantly from other types of assets, additional disclosure benefits users of the balance sheet.
- On the income statement, companies should present amortization expense and impairment losses for intangible assets separately and as part of continuing operations (see Illustration 11.3).
- The notes to the financial statements should include information about acquired intangible assets, including the aggregate amortization expense for each of the succeeding five years. If separate accumulated amortization accounts are not used, accumulated amortization should be disclosed in the notes.

Put It into Practice LO 11.2

Account for Various Types of Intangibles

FACTS Sky Co., organized in 2025, provided you with the following information.

1. Purchased a license for $20,000 on July 1, 2025. The license gives Sky exclusive rights to sell its services in the tri-state region and will expire on July 1, 2033.
2. Purchased a patent on January 2, 2026, for $40,000. It is estimated to have a 5-year life.
3. Costs incurred to develop an exclusive Internet connection process as of June 1, 2026, were $45,000. The process has an indefinite life.
4. On July 1, 2026, legal fees for successful defense of the patent purchased on January 2, 2026, were $11,400.
5. Research and development costs incurred as of September 1, 2026, were $75,000.

INSTRUCTIONS

a. Prepare the journal entries to record all the entries related to the patent during 2026.

b. At December 31, 2026, an impairment test is performed on the license purchased in 2025. It is estimated that the net cash flows to be received from the license will be $13,000, and its fair value is $7,000. Compute the amount of impairment and prepare the impairment journal entry, if any, to be recorded on December 31, 2026.

c. What is the amount to be reported for intangible assets on the balance sheet at December 31, 2025? At December 31, 2026?

SOLUTION

a.

January 2, 2026

Patents	40,000	
Cash		40,000

July 1, 2026

Patents	11,400	
Cash		11,400

December 31, 2026

Amortization Expense	9,267*	
Patents		9,267

*Computation of patent amortization expense:

$40,000 × 12/60 months	$8,000
$11,400 × 6/54 months	1,267
Total	$9,267

b. Computation of impairment loss on the license at December 31, 2026:

Cost of the license	$20,000
Less: Accumulated amortization ($20,000 × 18/96 months)	3,750
Book value	$16,250

Book value of $16,250 is greater than net cash flows of $13,000. Therefore, the license is impaired. The impairment loss is computed as follows.

Book value	$16,250
Fair value	7,000
Loss on impairment	$ 9,250

December 31, 2026

Loss on Impairment	9,250	
Licenses		9,250

c. Intangible assets as of December 31, 2025:

Licenses		$18,750*
*Cost	$20,000	
Less: Accumulated amortization ($20,000 × 6/96)	1,250	
Total	$18,750	

Intangible assets as of December 31, 2026:

Licenses	$ 7,000
Patents ($40,000 + $11,400 − $9,267)	42,133

All the costs to develop the Internet connection process and the research and development costs ($45,000 + $75,000 = $120,000) are expensed as incurred.

11.3 Goodwill

LEARNING OBJECTIVE 3

Explain the accounting issues for recording goodwill.

Earlier, we discussed **UMG**'s $300 million purchase of the copyrights to Bob Dylan's music. That is a great example of how valuable some intangible assets become. However, a company may not know how valuable its internally generated intangible assets are until it is ready to sell them and there is a willing buyer. For example, what is the **Nike** "swoosh" worth? What is the name **Coca-Cola** worth? Selling these trademarks and tradenames would essentially mean selling the entire company.

- While companies may capitalize certain costs incurred in developing specifically identifiable intangible assets such as patents, copyrights, and tradenames, the amounts capitalized are generally insignificant.
- However, companies do record material amounts of intangible assets when purchasing them, particularly in situations involving a business combination (the purchase of another business).

To illustrate, assume that Portofino Company decides to purchase Aquinas Company. In this situation, Portofino measures the assets acquired and the liabilities assumed at fair value. In measuring these assets and liabilities, Portofino must identify all the assets and liabilities of Aquinas. As a result, Portofino may recognize some assets or liabilities not previously recognized by Aquinas. For example, Portofino may recognize intangible assets such as a brand name, patent, or customer list that were not recorded by Aquinas. In this case, Aquinas may not have recognized these assets because they were developed internally and charged to expense.

In many business combinations, the purchasing company records goodwill. **Goodwill is measured as the excess of the cost of the purchase over the fair value of the identifiable net assets (assets less liabilities) purchased.** For example, if Portofino paid $2,000,000 to purchase Aquinas's identifiable net assets (with a fair value of $1,500,000), Portofino records goodwill of $500,000. Goodwill is therefore measured as a residual rather than measured directly. That is why goodwill is sometimes referred to as a **plug**, a **gap filler**, or a **master valuation account**.[5]

Conceptually, goodwill represents the future economic benefits arising from the other assets acquired in a business combination that are not individually identified and separately recognized. It is often called "the most intangible of the intangible assets" because it is identified only with the business as a whole. The only way to sell goodwill is to sell the business.

[5]GAAP **[6]** provides detailed guidance regarding the recognition of identifiable intangible assets in a business combination. With this guidance, companies should recognize more identifiable intangible assets, and less goodwill, in the financial statements as a result of business combinations.

Underlying Concepts

Capitalizing goodwill only when it is purchased in an arm's-length transaction, and not capitalizing any goodwill generated internally, is another example of faithful representation winning out over relevance.

Recording Goodwill

Internally Created Goodwill

Goodwill generated internally should not be capitalized in the accounts. The reason? Measuring the components of goodwill is simply too complex, and associating any costs with future benefits is too difficult. The future benefits of goodwill may have no relationship to the costs incurred in the development of that goodwill. To add to the mystery, goodwill may even exist in the absence of specific costs to develop it. Finally, because no objective transaction with outside parties takes place, a great deal of subjectivity—even misrepresentation—may occur (see **Underlying Concepts**).

Purchased Goodwill

As indicated earlier, **goodwill is recorded only when an entire business is purchased**.

- To record goodwill, a company compares the fair value of the net tangible and identifiable intangible assets with the purchase price of the acquired business.
- The difference is considered goodwill.

Goodwill is the residual—the excess of cost over fair value of the identifiable net assets acquired.

To illustrate, Diversified, Inc. decides that it needs a parts division to supplement its existing tractor distributorship. The president of Diversified is interested in buying Tractorling Co., a small concern in Chicago. **Illustration 11.4** presents the balance sheet of Tractorling.

ILLUSTRATION 11.4 Tractorling Co. Balance Sheet

Tractorling Co.
Balance Sheet
As of December 31, 2025

Assets		Liabilities and Stockholders' Equity	
Cash	$ 25,000	Current liabilities	$ 55,000
Accounts receivable	35,000	Common stock	100,000
Inventory	42,000	Retained earnings	100,000
Property, plant, and equipment, net	153,000		
Total assets	$255,000	Total liabilities and stockholders' equity	$255,000

After considerable negotiation, Tractorling decides to accept Diversified's offer of $400,000. What, then, is the value of the goodwill, if any?

The answer is not obvious. Tractorling's historical-cost-based balance sheet does not disclose the fair values of its identifiable assets. Suppose, though, that as the negotiations progress, Diversified investigates Tractorling's underlying assets to determine their fair values. Such an investigation may be accomplished either through a purchase audit undertaken by Diversified or by an independent appraisal from some other source. The investigation determines the valuations shown in **Illustration 11.5**.

ILLUSTRATION 11.5 Fair Value of Tractorling's Net Assets

Fair Values	
Cash	$ 25,000
Accounts receivable	35,000
Inventory	122,000
Property, plant, and equipment, net	205,000
Patents	18,000
Liabilities	(55,000)
Fair value of net assets	$350,000

Normally, differences between current fair value and book value are more common among long-term assets than among current assets. Let's take a closer look these differences.

- Cash obviously poses no problems as to value.
- Receivables normally are fairly close to current valuation although they may at times need certain adjustments due to inadequate bad debt provisions.
- The $80,000 difference in Tractorling's inventories ($122,000 − $42,000) could result from a number of factors. The most likely is that the company uses LIFO. Recall that during periods of inflation, LIFO better matches expenses against revenues. However, it also creates a balance sheet distortion because ending inventory consists of older layers costed at lower valuations.
- In many cases, the values of long-term assets such as property, plant, and equipment and intangibles may have increased substantially over the years. This difference could be due to inaccurate estimates of useful lives, continual expensing of small expenditures (say, less than $300), inaccurate estimates of residual values, and the discovery of some unrecorded assets. (For example, in Tractorling's case, analysis determines Patents, not previously recognized, have a fair value of $18,000.)
- Liabilities usually are stated at book value. However, if interest rates have changed since the company incurred the liabilities, a different valuation (such as present value based on expected cash flows) is appropriate. Careful analysis must be made to determine that no unrecorded liabilities are present.

In summary, the investigation determines the fair value of net assets to be $350,000. Why would Diversified pay $400,000? Undoubtedly, Tractorling points to its established reputation, good credit rating, top management team, well-trained employees, and so on. These factors make the value of the business greater than $350,000. Diversified places a premium on the future earning power of these attributes as well as on the basic asset structure of the company today.

Diversified labels the difference between the purchase price of $400,000 and the fair value of net assets of $350,000 as goodwill. Goodwill is viewed as one or a group of unidentifiable values (intangible assets), the cost of which "is measured by the difference between the cost of the group of assets or enterprise acquired and the sum of the assigned costs of individual tangible and identifiable intangible assets acquired less liabilities assumed."[6] This procedure for valuation is called a **master valuation approach**. It assumes goodwill covers all the values that cannot be specifically identified with any identifiable tangible or intangible asset. **Illustration 11.6** shows this approach.

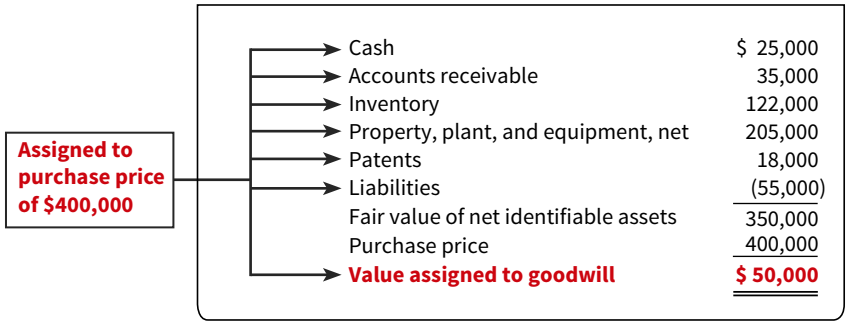

Assigned to purchase price of $400,000
Cash $ 25,000
Accounts receivable 35,000
Inventory 122,000
Property, plant, and equipment, net 205,000
Patents 18,000
Liabilities (55,000)
Fair value of net identifiable assets 350,000
Purchase price 400,000
Value assigned to goodwill $ 50,000

ILLUSTRATION 11.6
Determination of Goodwill—Master Valuation Approach

[6]The FASB expressed concern about measuring goodwill as a residual but noted that there is no real measurement alternative since goodwill is not separable from the company as a whole. [7]

Diversified records this transaction as follows.

Cash	25,000	
Accounts Receivable	35,000	
Inventory	122,000	
Property, Plant, and Equipment	205,000	
Patents	18,000	
Goodwill	50,000	
Liabilities		55,000
Cash		400,000

Companies often identify goodwill on the balance sheet as the **excess of cost over the fair value** of the net assets acquired.[7]

Impairment of Goodwill

Companies that recognize goodwill in a business combination **consider it to have an indefinite life and therefore should not amortize it**. Although goodwill may decrease in value over time, predicting the actual life of goodwill and an appropriate pattern of amortization is extremely difficult. In addition, investors find the amortization charge of little use in evaluating financial performance.

Therefore, companies adjust goodwill's carrying value only when it is impaired. Goodwill is tested for impairment at least annually. The impairment rule for goodwill is a fair value (quantitative) test as follows.

- If the fair value of the reporting unit (including goodwill) is **less than** the carrying value of the reporting unit (including goodwill), there **is an impairment loss.**
- If the fair value of the reporting unit (including goodwill) is **greater than** the carrying value of the reporting unit (including goodwill), there **is no impairment.**

If there is no impairment the company does not have to do anything else. When there is an impairment, because goodwill is the largest intangible asset on the company's balance sheet, the impairment loss is often substantial.

The accounting for goodwill is controversial. Some believe that goodwill's value eventually disappears. Therefore, they argue, companies should charge goodwill to expense over the periods affected, to better match expense with revenues. Others note that the accounting treatment for purchased goodwill and goodwill created internally should be consistent. They point out that companies immediately expense goodwill created internally and should follow the same treatment for purchased goodwill. Though these arguments may have some merit, nonamortization of goodwill combined with an adequate impairment test should provide the most useful financial information to the investment community.[8]

Example 11.12
Goodwill Impairment

FACTS Telling Time Corporation has three divisions. It purchased the Alarm Clock Division 4 years ago for $2 million. Unfortunately, the carrying value of the Alarm Clock Division experienced operating losses over the last three quarters. Management for Telling Time is now reviewing the division for purposes of recognizing an impairment. The following lists the carrying value of the Alarm Clock Division's net assets, including the associated goodwill of $900,000 from the purchase.

[7]Based on a recommendation from the Private Company Council (PCC), the FASB issued guidance [8] that allows private companies to forego separately recognizing and measuring certain intangible assets that are not capable of being sold or licensed independently in a business combination (e.g., customer relationships). An expanded discussion of the PCC and private company alternatives is provided in Appendix A.

[8]Private companies may account for goodwill as a limited-life intangible asset [9] and amortize goodwill on a straight-line basis over a period not to exceed 10 years. Under this alternative, goodwill is tested for impairment similar to other limited-life intangibles. An expanded discussion of this and other private company alternatives is provided in Appendix A.

Cash	$ 200,000
Accounts receivable	300,000
Inventory	700,000
Property, plant, and equipment (net)	800,000
Goodwill	900,000
Accounts and notes payable	(500,000)
Net assets	$2,400,000

Telling Time determines that the fair value of the Alarm Clock Division is $2,800,000.

QUESTION Should Telling Time recognize an impairment in the Alarm Clock Division? Explain and prepare any entries required if there is an impairment.

SOLUTION

Because the fair value of the division exceeds the carrying amount of the net assets of the reporting unit, Telling Time does not recognize any impairment.

What if the fair value of the Alarm Clock Division were less than the carrying amount of the reporting unit? In this situation, Telling Time measures the impairment. To illustrate, assume that the fair value of the Alarm Clock Division is $1,900,000 instead of $2,800,000. Telling Time computes the impairment loss as follows.

Fair value of Alarm Clock Division	$1,900,000
Less: Net assets (including goodwill)	2,400,000
Loss on impairment	$ 500,000

Telling Time makes the following entry to record the impairment.

Loss on Impairment	500,000	
Goodwill		500,000

Following this entry, the carrying value of the goodwill is $400,000.[9]

Goodwill

Beg. bal. 900,000	
	500,000
End. bal. 400,000	

Similar to other indefinite-life intangibles, companies may instead perform an optional qualitative assessment to determine whether it is more likely than not that goodwill is impaired. If the optional qualitative assessment indicates that the fair value of the reporting unit is more likely than not to be greater than the carrying value, the company need not continue with the fair value impairment test.[10]

Analytics in Action: Goodwill Hunting?

Total goodwill impairment by U.S. public companies fell 10% from 2018 to 2019—that's a good sign, right? Well, if we explore the data a bit further, we actually see that the 2018 impairment figure was significantly influenced by one impairment event that accounted for $22.1 billion of the total impairments. If we remove that outlier, total impairments would have **increased** by 25% during the same time period! Financial data can tell us a lot about something like goodwill and its related impairment, but it takes some work (and practice) to find the "right" data and present it in the "right" way to gain the most insights from the data.

Luckily for those who are interested in goodwill impairments, **Duff & Phelps** prepares a comprehensive goodwill impairment study each year that shows data from over 8,800 publicly traded companies to help users gain insights from the data. The study provided the following dashboard, which incorporates industry data and economic trends to better understand the story behind the data. Analytics, such as using information in this dashboard, can be a very powerful tool for managers and investors alike in understanding trends and helping to predict future outcomes.

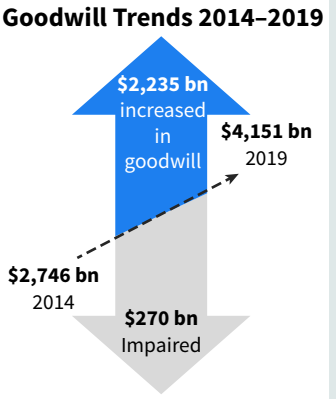
[9] Example 11.12 assumes that the carrying amount equals the fair value of net identifiable assets (excluding goodwill). This is, prior to performing the goodwill impairment text, any impairments of other assets in the reporting unit should have been recorded. **[10]**

[10] This optional assessment examines similar factors as those used in the optional qualitative assessment for other indefinite-life intangibles but are based on events and circumstances related to the reporting unit. **[11]**

Goodwill Impairment Study

Summary Statistics

8,896 Companies	**7.8%** Goodwill to Total Assets (GW/TA)	**1.8%** Goodwill Impaired (GWI/GW ratio)
30.3% Companies with Goodwill	**11.8%** Companies with Goodwill that Recorded a Goodwill Impairment in 2019	**2.0%** Market-to-Book Ratio (median)



Source: Duff & Phelps, *2020 U.S. Goodwill Impairment Study* (February 2021).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Bargain Purchase

In a few cases, the purchaser in a business combination pays **less than** the fair value of the identifiable net assets. Such a situation is referred to as a **bargain purchase**. A bargain purchase results from a market imperfection. That is, the seller would have been better off to sell the assets individually than in total. However, situations do occur in which the purchase price is less than the value of the net identifiable assets. Some examples include a forced liquidation or distressed sale due to the death of a company founder. In a bargain purchase situation, **the excess amount is recorded as a gain by the purchaser.**

Example 11.13
Bargain Purchase

FACTS Crème Crust is experiencing liquidity problems and must sell its business. Crème Crust's tangible and intangible assets have a fair value of $900,000 and liabilities of $100,000. Meltone Inc. purchases the business for $500,000.

QUESTIONS (a) How would you report this information on Meltone's financial statement? (b) What entry would you make to record the purchase?

SOLUTION

a. Meltone will report on its balance sheet the assets and liabilities at their fair values. On its income statement, it will report a gain on acquisition of $300,000, computed as follows.

Tangible and intangible assets	$900,000
Less: Liabilities	100,000
Net assets	800,000
Less: Purchase price	500,000
Gain on acquisition	$300,000

b. The journal entry for Meltone is as follows.

Assets	900,000	
Liabilities		100,000
Cash		500,000
Gain on Acquisition		300,000

The gain is reported on the income statement in the "Other revenues and gains" section, so it is part of continuing operations.

As indicated in Example 11.13, an economic gain is inherent in a bargain purchase. The purchaser is better off by the amount by which the fair value of what is acquired exceeds the amount paid.

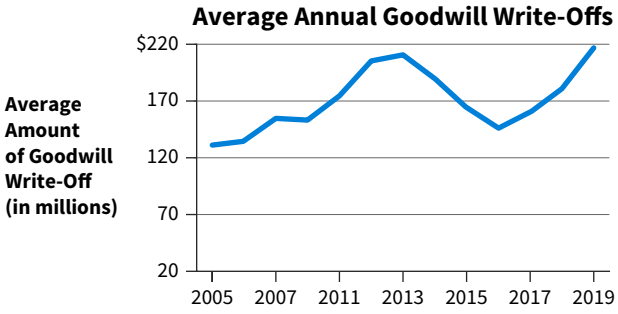
- Some expressed concern that some companies may attempt inappropriate gain recognition by making an intentional error in measurement of the assets or liabilities.
- Such gains typically receive a great deal of scrutiny from auditors and regulatory bodies.
- As a result, the FASB requires companies to disclose the nature of this gain transaction.

Such disclosure will help users to better evaluate the quality of the earnings reported.

Accounting Matters — Goodwill Impairments—Back to the Future

The adjacent chart shows how changes in general market conditions correspond to the ups and downs in goodwill impairments. As indicated, goodwill impairments spiked in the 2008–2012 time period, coinciding with the stock market downturn in the wake of the financial crisis, and have been on the rise in recent years in response to market uncertainty.

A spike in impairments when the market declines is understandable because decreases in stock price are indicators that the fair values of acquired assets have declined below the carrying value. So, what's the problem? Companies do not like the fair value impairment model for goodwill for two reasons: (1) the costly annual fair value test of reporting units in which goodwill resides, and (2) the volatility in income, which occurs when an impairment is recorded (see the chart).



In response to these criticisms, the FASB is considering changes to goodwill accounting, which might reintroduce amortization of goodwill. Such a change would be "Back to the Future," as this approach was GAAP before 2000. The change would reduce the likelihood of impairments because the carrying value of goodwill would be declining over time and be less likely to trigger an impairment charge.

The FASB may face some opposition to this change. Opponents argue that the change deprives investors of the only meaningful information about the consequences of corporate acquisitions, based on research showing that investors find goodwill write-offs as important new information about the performance of past acquisitions. Furthermore, reverting to goodwill accounting based on amortization belies the research showing that both the amortization expense in the income statement and the unamortized goodwill on the balance sheet are often ignored by investors.

Rather than a return to amortization, these opponents are urging the FASB to develop better accounting standards for corporate acquisitions, which will allow investors to track the **consequences** (success or failure) of growth through acquisitions, as compared to **organic** growth (net of acquisitions). This expanded reporting could enable investors and corporate board members to assess the wisdom of managers' acquisitions.

Sources: M. Mauer, "U.S. Accounting Standard-Setter Looks to Tackle Controversial Topics in 2021," *Wall Street Journal* (January 4, 2021); and F. Gu and B. Lev, "Back to the Future: FASB to Reverse Goodwill Accounting," *Seeking Alpha* (February 3, 2021).

Presentation of Goodwill

The reporting of goodwill is similar to the reporting of intangible assets (as shown in Illustration 11.3). As **Illustration 11.7** shows, companies should report goodwill as a separate item.

- On the income statement, companies should present impairment losses as a separate line item in the continuing operations section, unless the goodwill impairment is associated with a discontinued operation.
- The notes to the financial statements should include information about changes in the carrying amount of goodwill during the period.

ILLUSTRATION 11.7 Goodwill Disclosures

Pfizer Inc.
Consolidated Balance Sheet (partial)
(in millions)

Goodwill	$49,577

Notes to Consolidated Financial Statements

Note 1. Basis of Presentation and Significant Accounting Policies (partial)

Goodwill represents the excess of the consideration transferred for an acquired business over the assigned values of its net assets. Goodwill is not amortized.

Impairment methodology

We review our long-lived assets for impairment indicators throughout the year. We perform impairment testing for indefinite-lived intangible assets and goodwill at least annually and for all other long-lived assets whenever impairment indicators are present. When necessary, we record impairments of long-lived assets for the amount by which the fair value is less than the carrying value of these assets. For goodwill, when necessary, we determine the fair value of each reporting unit and record an impairment loss, if any, for the excess of the book value of the reporting unit over the implied fair value.

Note 10. Identifiable Intangible Assets and Goodwill

Goodwill reconciliation

The following summarizes the components and changes in the carrying amount of Goodwill:

millions of dollars	Total
Balance, January 1, 2019	$42,927
Additions	5,411
Other (foreign exchange impact)	(136)
Balance, December 31, 2019	48,202
Additions	727
Other (foreign exchange impact)	648
Balance, December 31, 2020	$ 49,577

Put It into Practice LO 11.3
Account for Goodwill

FACTS On July 1, 2025, James Corporation purchased Devon Company by paying $300,000 cash and issuing a $50,000 note payable to Devon. At July 1, 2025, before the purchase, the balance sheet of Devon Company was as follows.

Cash	$ 50,000	Accounts payable	$200,000
Accounts receivable	90,000	Stockholders' equity	235,000
Inventory	100,000		$435,000
Property, plant, and equipment (net)	185,000		
Trademarks	10,000		
	$435,000		

The recorded amounts for Devon all approximate current values except for property, plant, and equipment (fair value of $205,000), inventory (fair value of $125,000), and trademarks (fair value of $15,000).

INSTRUCTIONS

a. Determine the amount of goodwill to be recorded by James upon acquisition of Devon.

b. Prepare the December 31 entry for James to record amortization expense. The trademark has an estimated useful life of 4 years with a salvage value of $3,000.

c. At the end of the first full year of operations (2026), James conducts an impairment evaluation for the Devon reporting unit. The fair value of the Devon reporting unit is $300,000. The carrying value of the net assets of the Devon unit (including goodwill) is $335,000. Prepare any necessary journal entries given this information.

SOLUTION

a. One way to determine the amount of goodwill is to prepare the journal entry for the acquisition as follows.

Cash	50,000	
Accounts Receivable	90,000	
Inventory (at fair value)	125,000	
Property, Plant, and Equipment (at fair value)	205,000	
Trademarks (at fair value)	15,000	
Goodwill	65,000*	
Accounts Payable		200,000
Notes Payable		50,000
Cash		300,000

* Computation of goodwill

Amount paid: ($300,000 + $50,000)	$350,000
Less: Fair value of identifiable net assets	285,000**
Goodwill	$ 65,000

** $435,000 + $20,000 (Property, Plant, and Equipment) + $25,000 (Inventory) + $5,000 (Trademarks) − $200,000 (Accounts Payable)

Note that the property, plant, and equipment would be recorded at the July 1, 2025, cost to James; accumulated depreciation accounts would not be recorded as new ones and will be started by James after the purchase.

b. The amortization expense is recorded as follows.

Amortization Expense	1,500	
Trademarks [($15,000 − $3,000) × 1/4 × 6/12]		1,500

There is no amortization of goodwill.

c. Computation of possible impairment at December 31, 2026:

Fair value of the reporting unit	$300,000
Carrying value of reporting unit (including goodwill)	(335,000)
Impairment loss	$ 35,000

The goodwill impairment loss is recorded as follows.

Loss on Impairment	35,000	
Goodwill		35,000

11.4 Research and Development Costs

LEARNING OBJECTIVE 4

Describe the accounting and presentation for research and development and similar costs.

Research and development (R&D) costs are not in themselves intangible assets. However, we present the accounting for R&D costs here because R&D activities frequently result in the development of patents or copyrights (such as a new product, process, idea, formula, composition, or literary work) that may provide future value.

Many companies spend considerable sums on research and development. **Illustration 11.8** shows the outlays for R&D made by selected global companies.

ILLUSTRATION 11.8 R&D Outlays, as a Percentage of Sales

Company	Sales (in millions)	R&D/Sales
Pfizer	$41,908	22.44%
Meta Platforms	85,965	21.46
Motorola	7,887	8.71
3M	32,184	5.84
Boeing	58,158	4.26
Kimberly-Clark	19,140	1.44
PepsiCo	70,372	1.02

Global View

IFRS requires capitalization of some development costs. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

Two difficulties arise in accounting for R&D expenditures:

1. Identifying the costs associated with particular activities, projects, or achievements.
2. Determining the magnitude of the future benefits and length of time over which such benefits may be realized.

Because of these latter uncertainties, the FASB has simplified the accounting practice in this area. **Companies must expense all research and development costs when incurred** (see **Global View**). **[12]**

Identifying R&D Activities

Illustration 11.9 shows the definitions for **research activities** and **development activities**. These definitions differentiate research and development costs from other similar costs. **[13]**

ILLUSTRATION 11.9 Research Activities versus Development Activities

Research Activities	Development Activities
Planned search or critical investigation aimed at discovery of new knowledge.	Translation of research findings or other knowledge into a plan or design for a new product or process, or for a significant improvement to an existing product or process whether intended for sale or use.
Examples	**Examples**
Laboratory research aimed at discovery of new knowledge; searching for applications of new research findings.	Conceptual formulation and design of possible product or process alternatives; construction of prototypes and operation of pilot plants.

R&D activities do not include routine or periodic alterations to existing products, production lines, manufacturing processes, and other ongoing operations, even though these alterations may represent improvements. For example, routine ongoing efforts to refine, enrich, or improve the qualities of an existing product are not considered R&D activities.

Accounting for R&D Activities

The costs associated with R&D activities and the accounting treatments for them are as follows.

1. **Materials, equipment, and facilities.** Expense the entire costs, **unless the items have alternative future uses** (in other R&D projects or otherwise). If there are alternative future uses, carry the items as inventory and allocate as consumed, or capitalize and depreciate as used.
2. **Personnel.** Expense as incurred salaries, wages, and other related costs of personnel engaged in R&D.

3. **Purchased intangibles.** Recognize and measure at fair value. After initial recognition, account for in accordance with their nature as either limited-life or indefinite-life intangibles.[11]
4. **Contract services.** Expense the costs of services performed by others in connection with the R&D as incurred.
5. **Indirect costs.** Include a reasonable allocation of indirect costs in R&D costs, except for general and administrative cost, which must be clearly related to be included in R&D. **[15]**

Consistent with item 1 above, if a company owns a research facility that conducts R&D activities and that has alternative future uses (in other R&D projects or otherwise), it should capitalize the facility as an operating asset. The company accounts for depreciation and other costs related to such research facilities as R&D expenses.

To illustrate, assume that Next Century Incorporated develops, produces, and markets laser machines for medical, industrial, and defense uses. **Illustration 11.10** lists the types of expenditures related to its laser-machine activities, along with the recommended accounting treatment.

ILLUSTRATION 11.10 Sample R&D Expenditures and Their Accounting Treatment

Next Century Incorporated

Type of Expenditure	Accounting Treatment	Rationale
1. Construction of long-range research facility for use in current and future projects (three-story, 400,000-square-foot building).	Capitalize and depreciate as R&D expense.	Has alternative future use.
2. Acquisition of R&D equipment for use on current project only.	Expense immediately as R&D.	Research cost.
3. Acquisition of machinery for use on current and future R&D projects.	Capitalize and depreciate as R&D expense.	Has alternative future use.
4. Purchase of materials for use on current and future R&D projects.	Inventory and allocate to R&D projects; expense as consumed.	Has alternative future use.
5. Salaries of research staff designing new laser bone scanner.	Expense immediately as R&D.	Research cost.
6. Research costs incurred under contract with New Horizon, Inc., and billable monthly.	Record as a receivable.	Not R&D cost (reimbursable expense).
7. Material, labor, and overhead costs of prototype laser scanner.	Expense immediately as R&D.	Development cost.
8. Costs of testing prototype and design modifications.	Expense immediately as R&D.	Development cost.
9. Legal fees to obtain patent on new laser scanner.	Capitalize as patent and amortize to overhead as part of cost of goods manufactured.	Direct cost of patent.
10. Executive salaries.	Expense as operating expense.	Not R&D cost (general and administrative expense).
11. Cost of marketing research to promote new laser scanner.	Expense as operating expense.	Not R&D cost (selling expense).
12. Engineering costs incurred to advance the laser scanner to full production stage.	Expense immediately as R&D.	Development cost.
13. Costs of successfully defending patent on laser scanner.	Capitalize as patent and amortize to overhead as part of cost of goods manufactured.	Direct cost of patent.
14. Commissions to sales staff marketing new laser scanner.	Expense as operating expense.	Not R&D cost (selling expense).

[11] If R&D-related intangibles (often referred to as **in-process R&D**) are also acquired in a business combination, they are also recognized and measured at fair value. After initial recognition, these intangible assets are accounted for in accordance with their nature (as either limited-life or indefinite-life intangibles). **[14]**

Costs Similar to R&D Costs

Many costs have characteristics similar to research and development costs. Examples are:

1. Start-up costs for a new operation.
2. Initial operating losses.
3. Advertising costs.
4. Computer software costs.

For the most part, these costs are expensed as incurred, similar to the accounting for R&D costs.

Start-Up Costs

Start-up costs are incurred for one-time activities to start a new operation. Examples include opening a new plant, introducing a new product or service, or conducting business in a new territory. Start-up costs include **organizational costs**, such as legal and state fees incurred to organize a new business entity.

The accounting for start-up costs is straightforward: **Expense start-up costs as incurred.** The profession recognizes that companies incur start-up costs with the expectation of future revenues or increased efficiencies. However, to determine the amount and timing of future benefits is so difficult that a conservative approach—expensing these costs as incurred—is required. **[16]**

Example 11.14
Start-Up Costs

FACTS U.S.-based Hilo Beverage Company decides to construct a new plant in Brazil. This represents Hilo's first entry into the Brazilian market. Hilo plans to introduce the company's major U.S. brands into Brazil on a locally produced basis. The following costs might be involved.

1. Travel-related costs; costs related to employee salaries; and costs related to feasibility studies, accounting, tax, and government affairs.
2. Training of local employees related to product, maintenance, computer systems, finance, and operations.
3. Recruiting, organizing, and training related to establishing a distribution network.

QUESTION How would you account for these costs?

SOLUTION

Hilo Beverage should expense all these start-up costs as incurred. Start-up activities commonly occur at the same time as activities involving the acquisition of assets. For example, as it is incurring start-up costs for the new plant, Hilo probably is also buying or building property, plant, equipment, and inventory. Hilo should not immediately expense the costs of these tangible assets. Instead, it should report them on the balance sheet, using appropriate GAAP reporting guidelines.

Initial Operating Losses

Some contend that companies should be allowed to capitalize initial operating losses incurred in the start-up of a business. They argue that such operating losses are an unavoidable cost of starting a business. However, the accounting and reporting standards are no different for an enterprise trying to establish a new business than they are for long-standing enterprises.

Example 11.15
Initial Operating Losses

FACTS Continuing with Hilo Beverage from Example 11.14, now assume that Hilo lost money in its first year of operations and wishes to capitalize this loss. Hilo's CEO argues that as the company becomes profitable, it will offset these losses in future periods.

QUESTION How would you respond to Hilo's CEO?

SOLUTION

This approach is unsound since losses have no future service potential and therefore cannot be considered an asset. GAAP requires that operating losses during the early years **should not be capitalized.** **[17]**

Advertising Costs

Over the years, **PepsiCo** has hired various musical artists, such as Elton John and Beyoncé, to advertise its products. How should it report such advertising costs related to its star spokespeople? Pepsi Co could expense the costs in various ways:

1. When the artists have completed their singing assignments.
2. The first time the advertising takes place.
3. Over the estimated useful life of the advertising.
4. In an appropriate fashion to each of the three time periods identified above.
5. Over the period revenues are expected to result.

For the most part, Pepsi Co must expense advertising costs as incurred or the first time the advertising takes place. Whichever of these two approaches is followed, the results are essentially the same.

On the other hand, companies record as assets any tangible assets used in advertising, such as billboards or blimps. The rationale is that such assets do have alternative future uses. Again, the profession has taken a conservative approach to recording advertising costs because defining and measuring the future benefits can be so difficult. **[18]**

Computer Software Costs

A special problem arises in distinguishing R&D costs from selling and administrative activities. The FASB's intent was that companies exclude from the definition of R&D activities the acquisition, development, or improvement of a product or process **for use in their selling or administrative activities**. For example, the costs of software incurred by an airline in improving its computerized reservation system or the costs incurred in developing a company's management information system **are not** research and development costs, but should be reported as selling and administrative expenses.

Accounting Matters — Branded

For many companies, developing a strong brand image is as important as developing the products they sell. Now more than ever, companies see the power of a strong brand, enhanced by significant and effective advertising investments. As the following chart indicates, the value of brand investments is substantial. **Apple** heads the list with an estimated brand value of about $323 billion.

The World's 10 Most Valuable Brands

		(in billions)
1.	**Apple**	$323.0
2.	**Amazon**	200.7
3.	**Microsoft**	166.0
4.	**Google**	165.4
5.	**Samsung**	62.3
6.	**Coca-Cola**	56.9
7.	**Toyota**	51.6
8.	**Mercedes-Benz**	49.3
9.	**McDonald's**	42.8
10.	**Disney**	40.8

Generally, you will not find the estimated values of brands recorded in companies' balance sheets. The reason? The subjectivity that goes into estimating a brand's value. In some cases, analysts base an estimate of brand value on opinion polls or on some multiple of ad spending. For example, in estimating the brand values, **Interbrand Corp.** estimates the percentage of the overall future revenues the brand will generate and then discounts the net cash flows, to arrive at a present value.

Some analysts believe that information on brand values is relevant. Others voice valid concerns about the faithful representation of brand value estimates due to subjectivity in the estimates for revenues, costs, and the risk component of the discount rate. The nature of these approach support the subjectivity in brand valuation estimates.

Sources: S. Vranica and J. Hansegard, "Ikea Discloses an $11 Billion Secret," *Wall Street Journal* (August 9, 2012); and "Best Global Brands 2020," *interbrand.com*.

Presentation of Research and Development Costs

Companies should disclose in the financial statements (generally in the notes) the total R&D costs charged to expense each period for which they present an income statement. **Alphabet Inc.**, the parent company of **Google**, reported research and development in its recent income statement, as shown in **Illustration 11.11**.

ILLUSTRATION 11.11 Income Statement Disclosure of R&D Costs

Alphabet Inc.

(in millions)

	Years Ended December 31	
	2019	2020
Revenues	$161,857	$182,527
Costs and expenses		
Cost of revenues	71,896	84,732
Research and development	26,018	27,573
Sales and marketing	18,464	17,946
General and administrative	9,551	11,052
European Commission fines	1,697	0
Total costs and expenses	$127,626	$141,303

In addition, Alphabet provides a discussion about R&D expenditures in its annual report, as shown in **Illustration 11.12.**

ILLUSTRATION 11.12 Alphabet's R&D Disclosure

Alphabet Inc.

Research and Development (in part)

The following table presents our R&D expenses (in millions, except percentages):

	Year Ended December 31,	
	2019	2020
Research and development expenses	$ 26,018	$ 27,573
Research and development expenses as a percentage of revenues	16.1 %	15.1 %

R&D expenses consist primarily of:

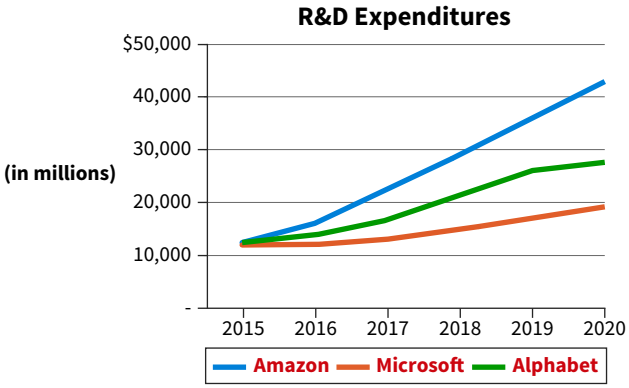
- Compensation expenses for engineering and technical employees responsible for R&D of our existing and new products and services;
- Depreciation expenses;
- Equipment-related expenses; and
- Professional services fees primarily related to consulting and outsourcing services.

Over time, R&D expenses as a percentage of revenues may fluctuate due to certain expenses that are generally less variable in nature and may not correlate to the changes in revenues. In addition, R&D expenses may be affected by a number of factors including continued investment in ads, Android, Chrome, Google Cloud, Google Play, hardware, machine learning, Other Bets, Search and YouTube.

Accounting Matters

"Alexa, Should R&D Costs Be Capitalized?"

Immediately expensing R&D expenditures is a practical solution to a challenging financial reporting issue and represents one of the many trade-offs among relevance, faithful representation, and cost-benefit considerations. Expensing R&D costs offers consistency in practice and uniformity among companies. However, companies make R&D expenditures with the expectation of benefiting in future periods from their innovation, which almost sounds like an asset! Consider the recent R&D expenditures for **Amazon**, **Microsoft**, and **Alphabet** shown in the adjacent chart.



As indicated, R&D expenditures are a significant (and growing) portion of total expenses for some companies, but every dollar spent on R&D does not necessarily turn into a successful product, service, or enhancement. In fact, in a recent letter to shareholders, Amazon declared itself, "the best place in the world to fail." Innovation and failure are inseparable; billions of dollars of failures at Amazon brings with it many successes that translate into profit and market value.

Separating which investments lead to successes versus failures is not practical and could bring a significant amount of subjectivity to the balance sheet if capitalized. As shown in Illustration 11.12, companies must disclose R&D costs in their financial statements which, along with management's discussion in the annual report, provides valuable information to investors and creditors.

Sources: Dennis Green, "Jeff Bezos Has Said That Amazon Has Had Failures Worth Billions of Dollars—Here Are Some of the Biggest Ones," *Business Insider* (July 5, 2019); and company 10-K annual reports.

Review and Practice

Key Terms Review

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Learning Objectives Review

1 Discuss the characteristics, valuation, and amortization of intangible assets.

Intangible assets have two main characteristics: (1) they lack physical existence, and (2) they are not financial instruments. In most cases, intangible assets provide services over a period of years and so are normally classified as long-term assets.

Intangibles are recorded at cost. Cost includes all acquisition costs and expenditures needed to make the intangible asset ready for its intended use. If intangibles are acquired in exchange for stock or other assets, the cost of the intangible is the fair value of the consideration given or the fair value of the intangible received, whichever is more clearly evident. When a company makes a "basket purchase" of several intangibles or a combination of intangibles and tangibles, it should allocate the cost on the basis of fair values.

Intangibles have either a limited useful life or an indefinite useful life. Companies amortize limited-life intangibles. They do not amortize indefinite-life intangibles. Limited-life intangibles should be amortized by systematic charges to expense over their

useful life. The useful life should reflect the period over which these assets will contribute to cash flows. The amount to report for amortization expense should reflect the pattern in which a company consumes or uses up the asset, if it can reliably determine that pattern. Otherwise, use a straight-line approach.

Impairment occurs when the carrying amount of the intangible asset is not recoverable. Companies use a recoverability test and a fair value test to determine impairments for limited-life intangibles. Companies use only a fair value test for indefinite-life intangibles.

2 Discuss the accounting and financial statement presentation for various types of intangible assets.

Major types of intangibles are (1) *marketing-related intangibles,* used in the marketing or promotion of products or services; (2) *customer-related intangibles,* resulting from interactions with outside parties; (3) *artistic-related intangibles,* giving ownership rights to such items as plays and literary works; (4) *contract-related intangibles,* representing the value of rights that arise from contractual arrangements; (5) *technology-related intangibles,* relating to innovations or technological advances; and (6) *goodwill,* arising from business combinations. The accounting for these intangible assets depends on whether they have a limited or indefinite life.

With respect to presentation, on the balance sheet, companies should report all intangible assets other than goodwill as a separate item. Contra accounts are not normally shown. If goodwill is present, it too should be reported as a separate item. On the income statement, companies should report amortization expense and impairment losses in continuing operations. The notes to the financial statements have additional detailed information.

3 Explain the accounting issues for recording goodwill.

Unlike receivables, inventories, and patents that a company can sell or exchange individually in the marketplace, goodwill can be identified only with the company as a whole. **Goodwill is recorded only when an entire business is purchased.** A company should not capitalize goodwill generated internally. The future benefits of goodwill may have no relationship to the costs incurred in the development of that goodwill. Goodwill may exist even in the absence of specific costs to develop it.

To record goodwill, a company compares the fair value of the net tangible and identifiable intangible assets with the purchase price of the acquired business. The difference is considered goodwill. Goodwill is the residual. Goodwill is often identified on the balance sheet as the excess of cost over the fair value of the net assets acquired. Goodwill impairments are based on a fair value test of the reporting unit.

4 Describe the accounting and presentation for research and development and similar costs.

R&D costs are not in themselves intangible assets, but R&D activities frequently result in the development of something a company patents or copyrights. The difficulties in accounting for R&D expenditures are (1) identifying the costs associated with particular activities, projects, or achievements, and (2) determining the magnitude of the future benefits and length of time over which a company may realize such benefits. Because of these latter uncertainties, companies are required to expense all research and development costs when incurred.

Illustration 11.10 shows typical costs associated with R&D activities and the accounting treatment accorded them. Many costs have characteristics similar to R&D costs. Examples are start-up costs, initial operating losses, and advertising costs. For the most part, these costs are expensed as incurred, similar to the accounting for R&D costs. Financial statements must disclose the total R&D costs charged to expense each period for which an income statement is presented.

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Questions

1. What are the two main characteristics of intangible assets?
2. If intangibles are acquired for stock, how is the cost of the intangible determined?
3. Intangibles have either a limited useful life or an indefinite useful life. How should these two different types of intangibles be amortized?
4. Why does the accounting profession make a distinction between internally created intangibles and purchased intangibles?
5. In 2025, Ghostbusters Corp. spent $420,000 for "goodwill" visits by sales personnel to key customers. The purpose of these visits was to build a solid, friendly relationship for the future and to gain insight into the problems and needs of the companies served. How should this expenditure be reported?
6. What are factors to be considered in estimating the useful life of an intangible asset?

7. What should be the pattern of amortization for a limited-life intangible?

8. **Columbia Sportswear Company** acquired a trademark that is helpful in distinguishing one of its new products. The trademark is renewable every 10 years at minimal cost. All evidence indicates that this trademarked product will generate cash flows for an indefinite period of time. How should this trademark be amortized?

9. Romo Company spent $190,000 developing a new process, $45,000 in legal fees to obtain a patent, and $91,000 to market the process that was patented, all in the year 2025. How should these costs be accounted for in 2025?

10. Izzy Inc. purchased a patent for $350,000 which has an estimated useful life of 10 years. Its pattern of use or consumption cannot be reliably determined. Prepare the entry to record the amortization of the patent in its first year of use.

11. Explain the difference between artistic-related intangible assets and contract-related intangible assets.

12. What is goodwill? What is a bargain purchase?

13. Under what circumstances is it appropriate to record goodwill in the accounts? How should goodwill, properly recorded on the books, be written off in order to conform with generally accepted accounting principles?

14. In examining financial statements, financial analysts often write off goodwill immediately. Comment on this procedure.

15. Braxton Inc. is considering the write-off of a limited-life intangible because of its lack of profitability. Explain to the management of Braxton how to determine whether a write-off is permitted.

16. Last year, Zeno Company recorded an impairment on an intangible asset held for use. Recent appraisals indicate that the asset has increased in value. Should Zeno record this recovery in value?

17. Explain how losses on impaired intangible assets should be reported in income.

18. Simon Company determines that its goodwill is impaired. It finds that the book value of its reporting unit is $1,490,000, including recorded goodwill of $400,000. The fair value of the identifiable assets of the reporting unit is $1,450,000. What is the amount of goodwill impaired?

19. What is the nature of research and development costs?

20. Research and development activities may include (a) personnel costs, (b) materials and equipment costs, and (c) indirect costs. What is the recommended accounting treatment for these three types of R&D costs?

21. Which of the following activities should be expensed currently as R&D costs?

a. Testing in search for or evaluation of product or process alternatives.

b. Engineering follow-through in an early phase of commercial production.

c. Legal work in connection with patent applications or litigation, and the sale or licensing of patents.

22. Indicate the proper accounting for the following items.

a. Organization costs.

b. Advertising costs.

c. Operating losses.

23. In 2024, Austin Powers Corporation developed a new product that will be marketed in 2025. In connection with the development of this product, the following costs were incurred in 2024: research and development costs $400,000, materials and supplies consumed $60,000, and compensation paid to research consultants $125,000. It is anticipated that these costs will be recovered in 2027. What is the amount of research and development costs that Austin Powers should record in 2024 as a charge to expense?

24. Recently, a group of college students decided to incorporate for the purposes of selling a process to recycle the waste product from manufacturing cheese. Some of the initial costs involved were legal fees and office expenses incurred in starting the business, state incorporation fees, and stamp taxes. One student wishes to charge these costs against revenue in the current period. Another wishes to defer these costs and amortize them in the future. Which student is correct?

25. An intangible asset with an estimated useful life of 30 years was acquired on January 1, 2015, for $540,000. On January 1, 2025, a review was made of intangible assets and their expected service lives, and it was determined that this asset had an estimated useful life of 30 more years from the date of the review. What is the amount of amortization for this intangible in 2025?

Brief Exercises

BE11.1 (LO 1) Taylor Swift Corporation purchases a patent from Salmon Company on January 1, 2025, for $54,000. The patent has a remaining legal life of 16 years. Taylor Swift estimates the patent will have a useful life of 10 years, based on expected product innovations in the market. Prepare Taylor Swift's journal entries to record the purchase of the patent and 2025 amortization.

BE11.2 (LO 1) Use the information provided in BE11.1. Assume that at January 1, 2027, the carrying amount of the patent on Taylor Swift's books is $43,200. In January, Taylor Swift spends $24,000 successfully defending a patent suit. Taylor Swift still feels the patent will be useful until the end of 2034. Prepare the journal entries to record the $24,000 expenditure and 2027 amortization.

BE11.3 (LO 1, 2) Stephen Curry, Inc., spent $68,000 in attorney fees while developing the trade name of its new product, the Mean Bean Machine. Prepare the journal entries to record the $68,000 expenditure and the first year's amortization, using an 8-year life.

BE11.4 (LO 1, 2) Gershwin Corporation obtained a franchise from Sonic Hedgehog Inc. for a cash payment of $120,000 on April 1, 2025. The franchise grants Gershwin the right to sell certain products and services for a period of 8 years. Prepare Gershwin's April 1 journal entry and December 31 adjusting entry.

BE11.5 (LO 3) On September 1, 2025, Winans Corporation acquired Aumont Enterprises for a cash payment of $700,000. At the time of purchase, Aumont's balance sheet showed assets of $620,000, liabilities of $200,000, and stockholders' equity of $420,000. The fair value of Aumont's assets is estimated to be $800,000. Compute the amount of goodwill recorded by Winans in the acquisition.

BE11.6 (LO 1) Kenoly Corporation owns a patent that has a carrying amount of $300,000. Kenoly expects future net cash flows from this patent to total $210,000. The fair value of the patent is $110,000. Prepare Kenoly's journal entry, if necessary, to record the loss on impairment.

BE11.7 (LO 3) Waters Corporation purchased Johnson Company 3 years ago and at that time recorded goodwill of $400,000. The Johnson Division's net assets, including the goodwill, have a carrying amount of $800,000. The fair value of the division is estimated to be $1,000,000. Prepare Waters' journal entry, if necessary, to record impairment of the goodwill.

BE11.8 (LO 3) Use the information provided in BE11.7. Assume that the fair value of the division is estimated to be $750,000. Prepare Waters' journal entry, if necessary, to record impairment of the goodwill.

BE11.9 (LO 1, 2) Nieland Industries had one patent recorded on its books as of January 1, 2025. This patent had a book value of $288,000 and a remaining useful life of 8 years. During 2025, Nieland incurred research and development costs of $96,000 and brought a patent infringement suit against a competitor. On December 1, 2025, Nieland received the good news that its patent was valid and that its competitor could not use the process Nieland had patented. The company incurred $85,000 to defend this patent. At what amount should patent(s) be reported on the December 31, 2025, balance sheet, assuming monthly amortization of patents?

BE11.10 (LO 1, 2) Sinise Industries acquired two copyrights during 2025. One copyright related to a textbook that was developed internally at a cost of $9,900. This textbook is estimated to have a useful life of 3 years from September 1, 2025, the date it was published. The second copyright (a history research textbook) was purchased from University Press on December 1, 2025, for $24,000. This textbook has an indefinite useful life. How should these two copyrights be reported on Sinise's balance sheet as of December 31, 2025?

BE11.11 (LO 4) R. Wilson Corporation commenced operations in early 2025. The corporation incurred $60,000 of costs such as fees to underwriters, legal fees, state fees, and promotional expenditures during its formation. Prepare journal entries to record the $60,000 expenditure and 2025 amortization, if any.

BE11.12 (LO 4) Treasure Land Corporation incurred the following costs in 2025.

Cost of laboratory research aimed at discovery of new knowledge	$120,000
Cost of testing in search for product alternatives	100,000
Cost of engineering activity required to advance the design of a product to the manufacturing stage	210,000
	$430,000

Prepare the necessary 2025 journal entry or entries for Treasure Land.

BE11.13 (LO 4) Indicate whether the following items are capitalized or expensed in the current year.

a. Purchase cost of a patent from a competitor.

b. Research and development costs.

c. Organizational costs.

d. Costs incurred internally to create goodwill.

Exercises

E11.1 (LO 1, 4) (Classification Issues—Intangibles) The following is a list of items that could be included in the intangible assets section of the balance sheet.

1. Investment in a subsidiary company.
2. Timberland.
3. Cost of engineering activity required to advance the design of a product to the manufacturing stage.
4. Lease prepayment (6 months' rent paid in advance).
5. Cost of equipment obtained.

6. Cost of searching for applications of new research findings.
7. Costs incurred in the formation of a corporation.
8. Operating losses incurred in the start-up of a business.
9. Training costs incurred in start-up of new operation.
10. Purchase cost of a franchise.
11. Goodwill generated internally.
12. Cost of testing in search for product alternatives.
13. Goodwill acquired in the purchase of a business.
14. Cost of developing a patent.
15. Cost of purchasing a patent from an inventor.
16. Legal costs incurred in securing a patent.
17. Unrecovered costs of a successful legal suit to protect the patent.
18. Cost of conceptual formulation of possible product alternatives.
19. Cost of purchasing a copyright.
20. Research and development costs.
21. Long-term receivables.
22. Cost of developing a trademark.
23. Cost of purchasing a trademark.

Instructions

a. Indicate which items on the list above would generally be reported as intangible assets in the balance sheet.

b. Indicate how, if at all, the items not reportable as intangible assets would be reported in the financial statements.

E11.2 (LO 1, 2) (Classification Issues—Intangibles) Presented below is selected information related to Martin Burke Inc. at year-end. All these accounts have debit balances.

Cable television franchises	Film contract rights
Music copyrights	Customer lists
Research and development costs	Prepaid expenses
Goodwill	Covenants not to compete
Cash	Brand names
Discount on notes payable	Notes receivable
Accounts receivable	Investments in affiliated companies
Property, plant, and equipment	Organization costs
Internet domain name	Land

Instructions

Identify which items should be classified as an intangible asset. For those items not classified as an intangible asset, indicate where they would be reported in the financial statements.

E11.3 (LO 1, 3, 4) Excel (Classification Issues—Intangible Assets) Joni Hyde Inc. has the following amounts reported in its general ledger at the end of the current year.

Organization costs	$24,000
Trademarks	15,000
Discount on bonds payable	35,000
Deposits with advertising agency for ads to promote goodwill of company	10,000
Excess of cost over fair value of net identifiable assets of acquired subsidiary	75,000
Cost of equipment acquired for research and development projects; the equipment has an alternative future use	90,000
Costs of developing a secret formula for a product that is expected to be marketed for at least 20 years	80,000

Instructions

a. On the basis of the information above, compute the total amount to be reported by Hyde for intangible assets on its balance sheet at year-end.

b. If an item is not to be included in intangible assets, explain its proper treatment for reporting purposes.

E11.4 (LO 1, 2, 4) (Intangible Amortization) The following is selected information for Alatorre Company.

1. Alatorre purchased a patent from Vania Co. for $1,000,000 on January 1, 2023. The patent is being amortized over its remaining legal life of 10 years, expiring on January 1, 2033. During 2025, Alatorre determined that the economic benefits of the patent would not last longer than 6 years from the date of acquisition. What amount should be reported in the balance sheet for the patent, net of accumulated amortization, at December 31, 2025?
2. Alatorre bought a franchise from Alexander Co. on January 1, 2024, for $400,000. The carrying amount of the franchise on Alexander's books on January 1, 2024, was $400,000. The franchise agreement had an estimated useful life of 30 years. Because Alatorre must enter a competitive bidding at the end of 2026, it is unlikely that the franchise will be retained beyond 2033. What amount should be amortized for the year ended December 31, 2025?
3. On January 1, 2025, Alatorre incurred organization costs of $275,000. What amount of organization expense should be reported in 2025?
4. Alatorre purchased the license for distribution of a popular consumer product on January 1, 2025, for $150,000. It is expected that this product will generate cash flows for an indefinite period of time. The license has an initial term of 5 years but by paying a nominal fee, Alatorre can renew the license indefinitely for successive 5-year terms. What amount should be amortized for the year ended December 31, 2025?

Instructions

Answer the questions asked about each of the factual situations.

E11.5 (LO 1, 2, 4) (Correct Intangible Assets Account) As the recently appointed auditor for Bryan Corporation, you have been asked to examine selected accounts before the 6-month financial statements of June 30, 2025, are prepared. The controller for Bryan Corporation mentions that only one account is kept for intangible assets. The account is shown below.

Intangible Assets

		Debit	Credit	Balance
Jan. 4	Research and development costs	940,000		940,000
Jan. 5	Legal costs to obtain patent	75,000		1,015,000
Jan. 31	Payment of 7 months' rent on property leased by Bryan	91,000		1,106,000
Feb. 11	Premium on common stock		250,000	856,000
March 31	Unamortized bond discount on bonds due March 31, 2045	84,000		940,000
April 30	Promotional expenses related to start-up of business	207,000		1,147,000
June 30	Operating losses for first 6 months	241,000		1,388,000

Instructions

Prepare the entry or entries necessary to correct this account. Assume that the patent has a useful life of 10 years.

E11.6 (LO 1, 2, 4) Excel (Recording and Amortization of Intangibles) Marshall Company, organized in 2024, has set up a single account for all intangible assets. The following summary discloses the debit entries that have been recorded during 2025.

1/2/25	Purchased patent (8-year life)	$ 350,000
4/1/25	Purchase goodwill (indefinite life)	360,000
7/1/25	Purchased franchise with 10-year life; expiration date 7/1/35	450,000
8/1/25	Payment of copyright (5-year life)	156,000
9/1/25	Research and development costs	215,000
		$1,531,000

Instructions

Prepare the necessary entries to clear the Intangible Assets account and to set up separate accounts for distinct types of intangibles. Make the entries as of December 31, 2025, recording any necessary amortization and reflecting all balances accurately as of that date. (Use straight-line amortization.)

E11.7 (LO 1, 2) (Accounting for Trade Name) In early January 2024, Outkast Corporation applied for a trade name, incurring legal costs of $16,000. In January 2025, Outkast incurred $7,800 of legal fees in a successful defense of its trade name.

Instructions

a. Compute 2024 amortization, 12/31/24 book value, 2025 amortization, and 12/31/25 book value if the company amortizes the trade name over 10 years.

b. Compute the 2025 amortization and the 12/31/25 book value, assuming that at the beginning of 2025, Outkast determines that the trade name will provide no future benefits beyond December 31, 2028.

c. Ignoring the response for part (b), compute the 2026 amortization and the 12/31/26 book value, assuming that at the beginning of 2026, based on new market research, Outkast determines that the fair value of the trade name is $15,000. Estimated total future cash flows from the trade name is $16,000 on January 3, 2026.

E11.8 (LO 1, 2, 4) (Accounting for Patents, Franchises, and R&D) Carter Company has provided information on intangible assets as follows.

A patent was purchased from Ford Company for $2,000,000 on January 1, 2024. Carter estimated the remaining useful life of the patent to be 10 years. The patent was carried in Ford's accounting records at a net book value of $2,000,000 when Ford sold it to Carter.

During 2025, a franchise was purchased from Polo Company for $480,000. In addition, 5% of revenue from the franchise must be paid to Polo. Revenue from the franchise for 2025 was $2,500,000. Carter estimates the useful life of the franchise to be 10 years and takes a full year's amortization in the year of purchase.

Carter incurred research and development costs in 2025 as follows.

Materials and equipment	$142,000
Personnel	189,000
Indirect costs	102,000
	$433,000

Carter estimates that these costs will be recouped by December 31, 2028. The materials and equipment purchased have no alternative uses.

On January 1, 2025, because of recent events in the field, Carter estimates that the remaining life of the patent purchased on January 1, 2024, is only 5 years from January 1, 2025.

Instructions

a. Prepare a schedule showing the intangibles section of Carter's balance sheet at December 31, 2025. Show supporting computations in good form.

b. Prepare a schedule showing the income statement effect (related to expenses) for the year ended December 31, 2025, as a result of the facts above. Show supporting computations in good form.

(AICPA adapted)

E11.9 (LO 1, 2, 4) (Accounting for Patents) During 2021, Winston Corporation spent $170,000 in research and development costs. As a result, a new product called the New Age Piano was patented. The patent was obtained on October 1, 2021, and had a legal life of 20 years and a useful life of 10 years. Legal costs of $18,000 related to the patent were incurred as of October 1, 2021.

Instructions

a. Prepare all journal entries required in 2021 and 2022 as a result of the transactions above.

b. On June 1, 2023, Winston spent $9,480 to successfully prosecute a patent infringement suit. As a result, the estimate of useful life was extended to 12 years from June 1, 2023. Prepare all journal entries required in 2023 and 2024.

c. In 2025, Winston determined that a competitor's product would make the New Age Piano obsolete and the patent worthless by December 31, 2026. Prepare all journal entries required in 2025 and 2026.

E11.10 (LO 1, 2, 4) (Accounting for Patents) Tones Industries has the following patents on its December 31, 2024, balance sheet.

Patent Item	Initial Cost	Date Acquired	Useful Life at Date Acquired
Patent A	$30,600	3/1/21	17 years
Patent B	$15,000	7/1/22	10 years
Patent C	$14,400	9/1/23	4 years

The following events occurred during the year ended December 31, 2025.

1. Research and development costs of $245,700 were incurred during the year.
2. Patent D was purchased on July 1 for $36,480. This patent has a useful life of 9½ years.

3. As a result of reduced demands for certain products protected by Patent B, a possible impairment of Patent B's value may have occurred at December 31, 2025. The controller for Tones estimates the expected future cash flows from Patent B will be as follows.

Year	Expected Future Cash Flows
2026	$2,000
2027	2,000
2028	2,000

The proper discount rate to be used for these flows is 8%. (Assume that the cash flows occur at the end of the year.)

Instructions

a. Compute the total carrying amount of Tones' patents on its December 31, 2024, balance sheet.

b. Compute the total carrying amount of Tones' patents on its December 31, 2025, balance sheet.

E11.11 (LO 3) (Accounting for Goodwill) Fred Moss, owner of Moss Interiors, is negotiating for the purchase of Zweifel Galleries. The following balance sheet of Zweifel is given in an abbreviated form as follows.

Zweifel Galleries
Balance Sheet
As of December 31, 2025

Assets		Liabilities and Stockholders' Equity		
Cash	$100,000	Accounts payable		$ 50,000
Land	70,000	Notes payable (long-term)		300,000
Buildings (net)	200,000	Total liabilities		350,000
Equipment (net)	175,000	Common stock	$200,000	
Copyrights (net)	30,000	Retained earnings	25,000	225,000
Total assets	$575,000	Total liabilities and stockholders' equity		$575,000

Moss and Zweifel agree that:

1. Land is undervalued by $30,000.
2. Equipment is overvalued by $5,000.

Zweifel agrees to sell the gallery to Moss for $350,000.

Instructions

Prepare the entry to record the purchase of Zweifel Galleries on Moss's books.

E11.12 (LO 1, 2, 3) (Accounting for Goodwill) On July 1, 2025, Brigham Corporation purchased Young Company by paying $250,000 cash and issuing a $100,000 note payable to Steve Young. At July 1, 2025, the balance sheet of Young Company was as follows.

Cash	$ 50,000	Accounts payable	$200,000
Accounts receivable	90,000	Stockholders' equity	235,000
Inventory	100,000		$435,000
Land	40,000		
Buildings (net)	75,000		
Equipment (net)	70,000		
Trademarks	10,000		
	$435,000		

The recorded amounts all approximate current values except for land (fair value of $60,000), inventory (fair value of $125,000), and trademarks (fair value of $15,000).

Instructions

a. Prepare the July 1 entry for Brigham Corporation to record the purchase.

b. Prepare the December 31 entry for Brigham Corporation to record amortization of intangibles. The trademark has an estimated useful life of 4 years with a residual value of $3,000.

E11.13 (LO 1, 2) (Copyright Impairment) Presented below is information related to a copyright owned by Mare Company at December 31, 2025.

Cost	$8,600,000
Carrying amount	4,300,000
Expected future net cash flows	4,000,000
Fair value	3,200,000

Assume that Mare Company will continue to use this copyright in the future. As of December 31, 2025, the copyright is estimated to have a remaining useful life of 10 years.

Instructions

a. Prepare the journal entry (if any) to record the impairment of the asset at December 31, 2025. The company does not use accumulated amortization accounts.

b. Prepare the journal entry to record amortization expense for 2026 related to the copyright.

c. The fair value of the copyright at December 31, 2026, is $3,400,000. Prepare the journal entry (if any) necessary to record the increase in fair value.

E11.14 (LO 3) (Goodwill Impairment) Presented below is net asset information related to the Carlos Division of Santana, Inc.

Carlos Division Net Assets As of December 31, 2025 (in millions)	
Cash	$ 50
Accounts receivable	200
Property, plant, and equipment (net)	2,600
Goodwill	200
Less: Notes payable	(2,700)
Net assets	$ 350

The purpose of the Carlos Division is to develop a nuclear-powered aircraft. If successful, traveling delays associated with refueling could be substantially reduced. Many other benefits would also occur. To date, management has not had much success and is deciding whether a write-down at this time is appropriate. Management estimated its future net cash flows from the project to be $400 million. Management has also received an offer to purchase the division for $335 million (deemed an appropriate fair value). All identifiable assets' and liabilities' book and fair value amounts are the same.

Instructions

a. Prepare the journal entry (if any) to record the impairment at December 31, 2025.

b. At December 31, 2026, it is estimated that the division's fair value increased to $345 million. Prepare the journal entry (if any) to record this increase in fair value.

E11.15 (LO 4) (Accounting for Organization Costs) Angelou Corporation was organized in 2024 and began operations at the beginning of 2025. The company is involved in interior design consulting services. The following costs were incurred prior to the start of operations.

Attorney fees in connection with organization of the company	$15,000
Purchase of drafting and design equipment	10,000
Costs of meetings of incorporators to discuss organizational activities	7,000
State filing fees to incorporate	1,000
	$33,000

Instructions

a. Compute the total amount of organization costs incurred by Angelou.

b. Prepare the journal entry to record organization costs for 2025.

E11.16 (LO 2, 4) (Accounting for R&D Costs) Price Company from time to time embarks on a research program when a special project seems to offer possibilities. In 2024, the company expends $325,000 on a research project, but by the end of 2024 it is impossible to determine whether any benefit will be derived from it.

Instructions

a. What account should be charged for the $325,000, and how should it be shown in the financial statements?

b. The project is completed in 2026, and a successful patent is obtained. The R&D costs to complete the project are $110,000. The administrative and legal expenses incurred in obtaining patent number 472-1001-84 in 2025 total $16,000. The patent has an expected useful life of 5 years. Record these costs in journal entry form. Also, record patent amortization (full year) in 2025.

c. In 2026, the company successfully defends the patent in extended litigation at a cost of $47,200, thereby extending the patent life to December 31, 2033. What is the proper way to account for this cost? Also, record patent amortization (full year) in 2026.

d. Additional engineering and consulting costs incurred in 2026 required to advance the design of a product to the manufacturing stage total $60,000. These costs enhance the design of the product considerably. Discuss the proper accounting treatment for this cost.

E11.17 (LO 4) (Accounting for R&D Costs) More Company incurred the following costs during the current year in connection with its research and development activities.

Cost of equipment acquired that will have alternative uses in future R&D projects over the next 5 years (uses straight-line depreciation)	$280,000
Materials consumed in R&D projects	59,000
Consulting fees paid to outsiders for R&D projects	100,000
Personnel costs of persons involved in R&D projects	128,000
Indirect costs reasonably allocable to R&D projects	50,000
Materials purchased for future R&D projects	34,000

Instructions

Compute the amount to be reported as research and development expense by More on its current year income statement. Assume equipment is purchased at the beginning of the year.

Problems

P11.1 (LO 1, 2, 3, 4) Groupwork (Correct Intangible Assets Account) Reichenbach Co., organized in 2024, has set up a single account for all intangible assets. The following summary discloses the debit entries that have been recorded during 2025 and 2026.

Intangible Assets

7/1/25	8-year franchise; expiration date 6/30/33	$ 48,000
10/1/25	Advance payment on laboratory space (2-year lease)	24,000
12/31/25	Net loss for 2025 including state incorporation fee, $1,000, and related legal fees of organizing, $5,000 (all fees incurred in 2025)	16,000
1/2/26	Patent purchased (10-year life)	84,000
3/1/26	Cost of developing a secret formula (indefinite life)	75,000
4/1/26	Goodwill purchased (indefinite life)	278,400
6/1/26	Legal fee for successful defense of patent purchased above	12,650
9/1/26	Research and development costs	160,000

Instructions

Prepare the necessary entries to clear the Intangible Assets account and to set up separate accounts for distinct types of intangibles. Make the entries as of December 31, 2026, recording any necessary amortization and reflecting all balances accurately as of that date. (Ignore income tax effects.)

P11.2 (LO 1, 2, 4) Excel (Accounting for Patents) Fields Laboratories holds a valuable patent (No. 758-6002-1A) on a precipitator that prevents certain types of air pollution. Fields does not manufacture or sell the products and processes it develops. Instead, it conducts research and develops products and processes which it patents, and then assigns the patents to manufacturers on a royalty basis. Occasionally it sells a patent. The history of Fields patent number 758-6002-1A is as follows.

Date	Activity	Cost
2016–2017	Research conducted to develop precipitator	$384,000
Jan. 2018	Design and construction of a prototype	87,600
March 2018	Testing of models	42,000
Jan. 2019	Fees paid engineers and lawyers to prepare patent application; patent granted June 30, 2019	59,500
Nov. 2020	Engineering activity necessary to advance the design of the precipitator to the manufacturing stage	81,500
Dec. 2021	Legal fees paid to successfully defend precipitator patent	42,000
April 2022	Research aimed at modifying the design of the patented precipitator	43,000
July 2026	Legal fees paid in unsuccessful patent infringement suit against a competitor	34,000

Fields assumed a useful life of 17 years when it received the initial precipitator patent. On January 1, 2024, it revised its useful life estimate downward to 5 remaining years. Amortization is computed for a full year if the cost is incurred prior to July 1, and no amortization for the year if the cost is incurred after June 30. The company's year ends December 31.

Instructions

Compute the carrying value of patent No. 758-6002-1A on each of the following dates:

a. December 31, 2019.

b. December 31, 2023.

c. December 31, 2026.

P11.3 (LO 1, 2, 4) (Accounting for Franchise, Patents, and Trademark) Information concerning Sandro Corporation's intangible assets is as follows.

1. On January 1, 2025, Sandro signed an agreement to operate as a franchisee of Hsian Copy Service, Inc. for an initial franchise fee of $75,000. Of this amount, $15,000 was paid when the agreement was signed, and the balance is payable in 4 annual payments of $15,000 each, beginning January 1, 2026. The agreement provides that the down payment is not refundable and no future services are required of the franchisor. The present value at January 1, 2025, of the 4 annual payments discounted at 14% (the implicit rate for a loan of this type) is $43,700. The agreement also provides that 5% of the revenue from the franchise must be paid to the franchisor annually. Sandro's revenue from the franchise for 2025 was $900,000. Sandro estimates the useful life of the franchise to be 10 years. (*Hint:* You may want to refer to Chapter 18 to determine the proper accounting treatment for the franchise fee and payments.)
2. Sandro incurred $65,000 of experimental and development costs in its laboratory to develop a patent that was granted on January 2, 2025. Legal fees and other costs associated with registration of the patent totaled $17,600. Sandro estimates that the useful life of the patent will be 8 years.
3. A trademark was purchased from Shanghai Company for $36,000 on July 1, 2022. Expenditures for successful litigation in defense of the trademark totaling $10,200 were paid on July 1, 2025. Sandro estimates that the useful life of the trademark will be 20 years from the date of acquisition.

Instructions

a. Prepare a schedule showing the intangible assets section of Sandro's balance sheet at December 31, 2025. Show supporting computations in good form.

b. Prepare a schedule showing all expenses resulting from the transactions that would appear on Sandro's income statement for the year ended December 31, 2025. Show supporting computations in good form.

(AICPA adapted)

P11.4 (LO 3) Groupwork (Goodwill, Impairment) On July 31, 2025, Mexico Company paid $3,000,000 to acquire all of the common stock of Conchita Incorporated, which became a division (a reporting unit) of Mexico. Conchita reported the following balance sheet at the time of the acquisition.

Current assets	$ 800,000	Current liabilities	$ 600,000
Noncurrent assets	2,700,000	Long-term liabilities	500,000
Total assets	$3,500,000	Stockholders' equity	2,400,000
		Total liabilities and stockholders' equity	$3,500,000

It was determined at the date of the purchase that the fair value of the identifiable net assets of Conchita was $2,750,000. Over the next 6 months of operations, the newly purchased division experienced operating losses. In addition, it now appears that it will generate substantial losses for the foreseeable future. At December 31, 2025, Conchita reports the following balance sheet information.

Current assets	$ 450,000
Noncurrent assets (including goodwill recognized in purchase)	2,400,000
Current liabilities	(700,000)
Long-term liabilities	(500,000)
Net assets	$1,650,000

Finally, it is determined that the fair value of the Conchita Division is $1,850,000.

Instructions

a. Compute the amount of goodwill recognized, if any, on July 31, 2025.

b. Determine the impairment loss, if any, to be recorded on December 31, 2025.

c. Assume that fair value of the Conchita Division is $1,600,000 instead of $1,850,000. Determine the impairment loss, if any, to be recorded on December 31, 2025.

d. Prepare the journal entry to record the impairment loss, if any, and indicate where the loss would be reported in the income statement.

P11.5 (LO 1, 2, 3, 4) Excel (Comprehensive Intangible Assets) Montana Matt's Golf Inc. was formed on July 1, 2024, when Matt Magilke purchased the Old Master Golf Company. Old Master provides video golf instruction at kiosks in shopping malls. Magilke plans to integrate the instructional business into his golf equipment and accessory stores. Magilke paid $770,000 cash for Old Master. At the time, Old Master's balance sheet reported assets of $650,000 and liabilities of $200,000 (thus stockholders' equity was $450,000). The fair value of Old Master's assets is estimated to be $800,000. Included in the assets is the Old Master trade name with a fair value of $10,000 and a copyright on some instructional books with a fair value of $24,000. The trade name has a remaining life of 5 years and can be renewed at nominal cost indefinitely. The copyright has a remaining life of 40 years.

Instructions

a. Prepare the intangible assets section of Montana Matt's Golf Inc. at December 31, 2024. How much amortization expense is included in Montana Matt's income for the year ended December 31, 2024? Show all supporting computations.

b. Prepare the journal entry to record amortization expense for 2025. Prepare the intangible assets section of Montana Matt's Golf Inc. at December 31, 2025. (No impairments are required to be recorded in 2025.)

c. At the end of 2026, Magilke is evaluating the results of the instructional business. Due to fierce competition from online and television (e.g., the Golf Channel), the Old Master reporting unit has been losing money. The fair value of the Old Master reporting unit is $420,000. Magilke has collected the following information related to the company's intangible assets.

Intangible Asset	Expected Cash Flows (undiscounted)	Fair Values
Trade names	$ 9,000	$ 3,000
Copyrights	30,000	25,000

Prepare the journal entries required, if any, to record impairments on Montana Matt's intangible assets. Assume that any amortization for 2026 has been recorded and that the carrying value of the reporting unit is $500,000 (which reflects recognition of any impairments other than goodwill). Show supporting computations.

P11.6 (LO 2, 4) (Accounting for R&D Costs) During 2023, Wright Tool Company purchased a building site for its proposed research and development laboratory at a cost of $60,000. Construction of the building was started in 2023. The building was completed on December 31, 2024, at a cost of $320,000 and was placed in service on January 2, 2025. The estimated useful life of the building for depreciation purposes was 20 years. The straight-line method of depreciation was to be employed, and there was no estimated residual value.

Management estimates that about 50% of the projects of the research and development group will result in long-term benefits (i.e., at least 10 years) to the corporation. The remaining projects either benefit the current period or are abandoned before completion. A summary of the number of projects and the direct costs incurred in conjunction with the research and development activities for 2025 appears below.

	Number of Projects	Salaries and Employee Benefits	Other Expenses (excluding Building Depreciation Charges)
Completed projects with long-term benefits	15	$ 90,000	$50,000
Abandoned projects or projects that benefit the current period	10	65,000	15,000
Projects in process—results indeterminate	5	40,000	12,000
Total	30	$195,000	$77,000

Upon recommendation of the research and development group, Wright Tool Company acquired a patent for manufacturing rights at a cost of $88,000. The patent was acquired on April 1, 2024, and has an economic life of 10 years.

Instructions

If generally accepted accounting principles were followed, how would the items above relating to research and development activities be reported on the following financial statements?

a. The company's income statement for 2025.

b. The company's balance sheet as of December 31, 2025.

Be sure to give account titles and amounts, and briefly justify your presentation.

(CMA adapted)

Using Your Judgement

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ11.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. Does P&G report any intangible assets, especially goodwill, in its 2020 financial statements and accompanying notes?

b. How much research and development (R&D) cost was expensed by P&G in 2019 and 2020? What percentage of sales revenue and net income did P&G spend on R&D in 2019 and 2020?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ11.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. **1.** What amounts for intangible assets were reported in their respective balance sheets by Coca-Cola and PepsiCo at year-end 2020?

2. What percentage of total assets is each of these reported amounts at year-end 2020?

3. What was the change in the amount of intangibles from 2019 to 2020 for Coca-Cola and PepsiCo?

b. **1.** On what basis and over what periods of time did Coca-Cola and PepsiCo amortize their intangible assets?

2. What were the amounts of accumulated amortization reported by Coca-Cola and PepsiCo at the end of 2019 and 2020?

3. What was the composition of the infinite-life and indefinite-life intangible assets reported by Coca-Cola and PepsiCo at the end of 2020?

Financial Statement Analysis Case: Merck and Johnson & Johnson

UYJ11.3 **Merck** and **Johnson & Johnson** are two leading producers of healthcare products. Each has considerable assets, and each expends considerable funds each year toward the development of new products. The development of a new healthcare product is often very expensive, and risky. New products frequently must undergo considerable testing before approval for distribution to the public. For example, it took Johnson & Johnson 4 years and $200 million to develop its 1-DAY ACUVUE® contact lenses. Below are some basic data compiled from the financial statements of these two companies (all dollars in millions).

	Johnson & Johnson	Merck
Total assets	$53,317	$42,573
Total revenue	47,348	22,939
Net income	8,509	5,813
Research and development expense	5,203	4,010
Intangible assets	11,842	2,765

Instructions

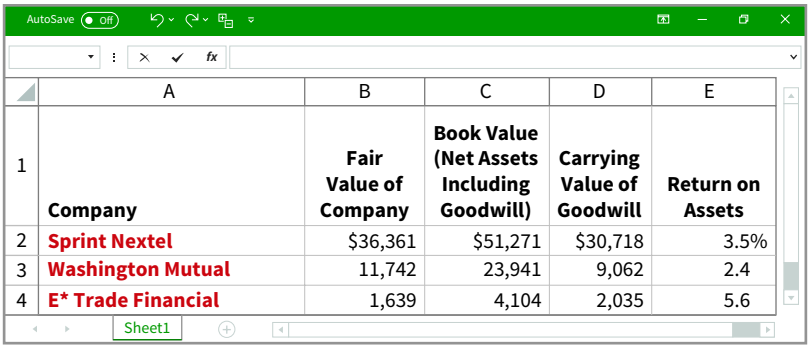
a. What kinds of intangible assets might a healthcare products company have? Does the composition of these intangibles matter to investors—that is, would it be perceived differently if all of Merck's intangibles were goodwill than if all of its intangibles were patents?

b. Suppose the president of Merck has come to you for advice. He has noted that by eliminating research and development expenditures the company could have reported $4 billion more in net income. He is frustrated because much of the research never results in a product, or the products take years to develop. He says shareholders are eager for higher returns, so he is considering eliminating research and development expenditures for at least a couple of years. What would you advise?

c. The notes to Merck's financial statements note that Merck has goodwill of $1.1 billion. Where does recorded goodwill come from? Is it necessarily a good thing to have a lot of goodwill on a company's books?

Financial Statement Analysis Case: Analysis of Goodwill

UYJ11.4 As a new intern for the local branch office of a national brokerage firm, you are excited to get an assignment that allows you to use your accounting expertise. Your supervisor provides you with the spreadsheet below, which contains data for the most recent quarter for three companies that the firm has been recommending to its clients as "buys." Each of the companies' returns on assets has outperformed their industry cohorts in the past. But, given recent challenges in their markets, there is concern that the companies may experience operating challenges and lower earnings. (All numbers in millions, except return on assets.)



	A	B	C	D	E
1	**Company**	**Fair Value of Company**	**Book Value (Net Assets Including Goodwill)**	**Carrying Value of Goodwill**	**Return on Assets**
2	**Sprint Nextel**	$36,361	$51,271	$30,718	3.5%
3	**Washington Mutual**	11,742	23,941	9,062	2.4
4	**E* Trade Financial**	1,639	4,104	2,035	5.6

Sheet1

Instructions

a. The fair value for each of these companies is lower than the corresponding book value. What implications does this have for each company's future prospects?

b. To date, none of these companies has recorded goodwill impairments. Your supervisor suspects that they will need to record impairments in the near future, but he is unsure about the goodwill impairment rules. Is it likely that these companies will recognize impairments? Explain.

c. Estimate the amount of goodwill impairment for each company and indicate how to record the impairment.

d. Discuss the effects of your entries in part (c) on your evaluation of these companies based on the return on assets ratio.

Accounting, Analysis, and Principles

UYJ11.5 On January 2, 2025, Raconteur Corp. reported the following intangible assets: (1) copyright with a carrying value of $15,000, and (2) a trade name with a carrying value of $8,500. The trade name has a remaining life of 5 years and can be renewed at nominal cost indefinitely. The copyright has a remaining life of 10 years.

At December 31, 2025, Raconteur assessed the intangible assets for possible impairment and developed the following information.

	Estimated Undiscounted Expected Future Cash Flows	Estimated Fair Value
Copyright	$20,000	$16,000
Trade name	10,000	5,000

Accounting

Prepare any journal entries required for Raconteur's intangible assets at December 31, 2025.

Analysis

Many stock analysts indicate a preference for less-volatile operating income measures. Such measures make it easier to predict future income and cash flows, using reported income measures. How does the accounting for impairments of intangible assets affect the volatility of operating income?

Principles

Many accounting issues involve a trade-off between the primary characteristics of relevant and representationally faithful information. How does the accounting for intangible asset impairments reflect this trade-off?

Developing Your Professional Skills

Critical-Thinking Cases

CT11.1 (LO 4) (Accounting for Pre-Opening Costs) After securing lease commitments from several major stores, Auer Shopping Center, Inc. was organized and built a shopping center in a growing suburb.

The shopping center would have opened on schedule on January 1, 2025, if it had not been struck by a severe tornado in December. Instead, it opened for business on October 1, 2025. All of the additional construction costs that were incurred as a result of the tornado were covered by insurance.

In July 2024, in anticipation of the scheduled January opening, a permanent staff had been hired to promote the shopping center, obtain tenants for the uncommitted space, and manage the property.

A summary of some of the costs incurred in 2024 and the first nine months of 2025 follows.

	2024	January 1, 2025 through September 30, 2025
Interest on mortgage bonds	$720,000	$540,000
Cost of obtaining tenants	300,000	360,000
Promotional advertising	540,000	557,000

The promotional advertising campaign was designed to familiarize shoppers with the center. Had it been known in time that the center would not open until October 2025, the 2024 expenditure for promotional advertising would not have been made. The advertising had to be repeated in 2025.

All of the tenants who had leased space in the shopping center at the time of the tornado accepted the October occupancy date on condition that the monthly rental charges for the first 9 months of 2025 be canceled.

Instructions

Explain how each of the costs for 2024 and the first 9 months of 2025 should be treated in the accounts of the shopping center corporation. Give the reasons for each treatment.

(AICPA adapted)

CT11.2 (LO 1, 2) Writing (Accounting for Patents) On June 30, 2025, your client, Ferry Company, was granted two patents covering plastic cartons that it had been producing and marketing profitably for the past 3 years. One patent covers the manufacturing process, and the other covers the related products.

Ferry executives tell you that these patents represent the most significant breakthrough in the industry in the past 30 years. The products have been marketed under the registered trademarks Evertight, Duratainer, and Sealrite. Licenses under the patents have already been granted by your client to other manufacturers in the United States and abroad, and are producing substantial royalties.

On July 1, Ferry commenced patent infringement actions against several companies whose names you recognize as those of substantial and prominent competitors. Ferry's management is optimistic that these suits will result in a permanent injunction against the manufacture and sale of the infringing products as well as collection of damages for loss of profits caused by the alleged infringement.

The financial vice president has suggested that the patents be recorded at the discounted value of expected net royalty receipts.

Instructions

a. What is the meaning of "discounted value of expected net receipts"? Explain.

b. How would such a value be calculated for net royalty receipts?

c. What basis of valuation for Ferry's patents would be generally accepted in accounting? Give supporting reasons for this basis.

d. Assuming no practical problems of implementation and ignoring generally accepted accounting principles, what is the preferable basis of valuation for patents? Explain.

e. What would be the preferable theoretical basis of amortization? Explain.

f. What recognition, if any, should be made of the infringement litigation in the financial statements for the year ending September 30, 2025? Discuss.

(AICPA adapted)

CT11.3 (LO 4) Writing (Accounting for Research and Development Costs) Cuevas Co. is in the process of developing a revolutionary new product. A new division of the company was formed to develop, manufacture, and market this new product. As of year-end (December 31, 2025), the new product has not been manufactured for resale. However, a prototype unit was built and is in operation.

Throughout 2025, the new division incurred certain costs. These costs include design and engineering studies, prototype manufacturing costs, administrative expenses (including salaries of administrative

personnel), and market research costs. In addition, approximately $900,000 in equipment (with an estimated useful life of 10 years) was purchased for use in developing and manufacturing the new product. Approximately $315,000 of this equipment was built specifically for the design development of the new product. The remaining $585,000 of equipment was used to manufacture the pre-production prototype and will be used to manufacture the new product once it is in commercial production.

Instructions

a. How are "research" and "development" defined in the authoritative literature (GAAP)?

b. Briefly indicate the practical and conceptual reasons for the conclusion reached by the Financial Accounting Standards Board on accounting and reporting practices for research and development costs.

c. In accordance with GAAP, how should the various costs of Cuevas described above be recorded on the financial statements for the year ended December 31, 2025?

(AICPA adapted)

CT11.4 (LO 4) Ethics (Accounting for Research and Development Costs) Czeslaw Corporation's research and development department has an idea for a project it believes will culminate in a new product that would be very profitable for the company. Because the project will be very expensive, the department requests approval from the company's controller, Jeff Reid.

Reid recognizes that corporate profits have been down lately and is hesitant to approve a project that will incur significant expenses that cannot be capitalized due to the requirements of the authoritative literature. He knows that if they hire an outside firm that does the work and obtains a patent for the process, Czeslaw Corporation can purchase the patent from the outside firm and record the expenditure as an asset. Reid knows that the company's own R&D department is first-rate, and he is confident they can do the work well.

Instructions

Answer the following questions.

a. Who are the stakeholders in this situation?

b. What are the ethical issues involved?

c. What should Reid do?

FASB Codification References

[1] FASB ASC 350-10-05. [Predecessor literature: "Goodwill and Other Intangible Assets," *Statement of Financial Accounting Standards No. 142* (Norwalk, Conn.: FASB, 2001).]

[2] FASB ASC 350-30-35. [Predecessor literature: "Goodwill and Other Intangible Assets," *Statement of Financial Accounting Standards No. 142* (Norwalk, Conn.: FASB, 2001), par. 11.]

[3] FASB ASC 805-10-30. [Predecessor literature: "Business Combinations," *Statement of Financial Accounting Standards No. 141R* (Norwalk, Conn.: FASB, 2007).]

[4] FASB ASC 805-10. [Predecessor literature: "Business Combinations," *Statement of Financial Accounting Standards No. 141R* (Norwalk, Conn.: FASB, 2007).]

[5] FASB ASC 350-30-35. [Predecessor literature: "Goodwill and Other Intangible Assets," *Statement of Financial Accounting Standards No. 142* (Norwalk, Conn.: FASB, 2001), par. B55.]

[6] FASB ASC 805-10-20. [Predecessor literature: "Business Combinations," *Statement of Financial Accounting Standards No. 141R* (Norwalk, Conn.: FASB, 2007).]

[7] FASB ASC 805-10-30. [Predecessor literature: "Business Combinations," *Statement of Financial Accounting Standards No. 141R* (Norwalk, Conn.: FASB, 2007).]

[8] FASB ASC 805-20-15. [Predecessor literature: None.]

[9] FASB ASC 350-20-15. [Predecessor literature: None.]

[10] FASB ASC 350-20-35-31. [Predecessor literature: None.]

[11] FASB ASC 350-20-35. [Predecessor literature: "Goodwill and Other Intangible Assets," *Statement of Financial Accounting Standards No. 142* (Norwalk, Conn.: FASB, 2001).]

[12] FASB ASC 735-10-25-1. [Predecessor literature: "Accounting for Research and Development Costs," *Statement of Financial Accounting Standards No. 2* (Stamford, Conn.: FASB, 1974), par. 11.]

[13] FASB ASC Master Glossary. [Predecessor literature: "Accounting for Research and Development Costs," *Statement of Financial Accounting Standards No. 2* (Stamford, Conn.: FASB, 1974), par. 8.]

[14] FASB ASC 805-10. [Predecessor literature: "Business Combinations," *Statement of Financial Accounting Standards No. 141–Revised* (Norwalk, Conn.: FASB, 2007), par. E11.]

[15] FASB ASC 730-10-25-2. [Predecessor literature: "Accounting for Research and Development Costs," *Statement of Financial Accounting Standards No. 2* (Stamford, Conn.: FASB, 1974), par. 11.]

[16] FASB ASC 720-15-25. [Predecessor literature: "Reporting on the Costs of Start-up Activities," *Statement of Position 98-5* (New York: AICPA, 1998).]

[17] FASB ASC 915-205-45-1. [Predecessor literature: "Accounting and Reporting by Development Stage Enterprises," *Statement of Financial Accounting Standards No. 7* (Stamford, Conn.: FASB, 1975), par. 10.]

[18] FASB ASC 720-35-05-3. [Predecessor literature: "Reporting on Advertising Costs," *Statement of Position 93-7* (New York: AICPA, 1993).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE11.1 Access the Codification glossary ("Master Glossary") to answer the following.

a. What is the definition provided for an intangible asset?

b. What is the definition of goodwill?

c. What is the definition of research and development (R&D)?

CE11.2 Your friend Harry does not understand the concept of an indefinite-life intangible asset. He wonders, "Does this mean the life is infinite?" What does the authoritative literature say about indefinite-life intangible assets?

CE11.3 What guidance does the Codification provide concerning the disclosure of research and development (R&D) costs?

CE11.4 What is the nature of the authoritative guidance for advertising costs for entertainment companies?

Codification Research Case

King Company is contemplating the purchase of a smaller company, which is a distributor of King's products. Top management of King is convinced that the acquisition will result in significant synergies in its selling and distribution functions. The financial management group (of which you are a part) has been asked to prepare some analysis of the effects of the acquisition on the combined company's financial statements. This is the first acquisition for King, and some of the senior staff insist that based on their recollection of goodwill accounting, any goodwill recorded on the acquisition will result in a "drag" on future earnings for goodwill amortization. Other younger members on the staff argue that goodwill accounting has changed. Your supervisor asks you to research this issue.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the accounting literature that addresses goodwill and other intangible assets.

b. Define goodwill.

c. Is goodwill subject to amortization? Explain.

d. What is the quantitative impairment test? Are defined taxes considered in the test? Explain.

Additional Professional Resources

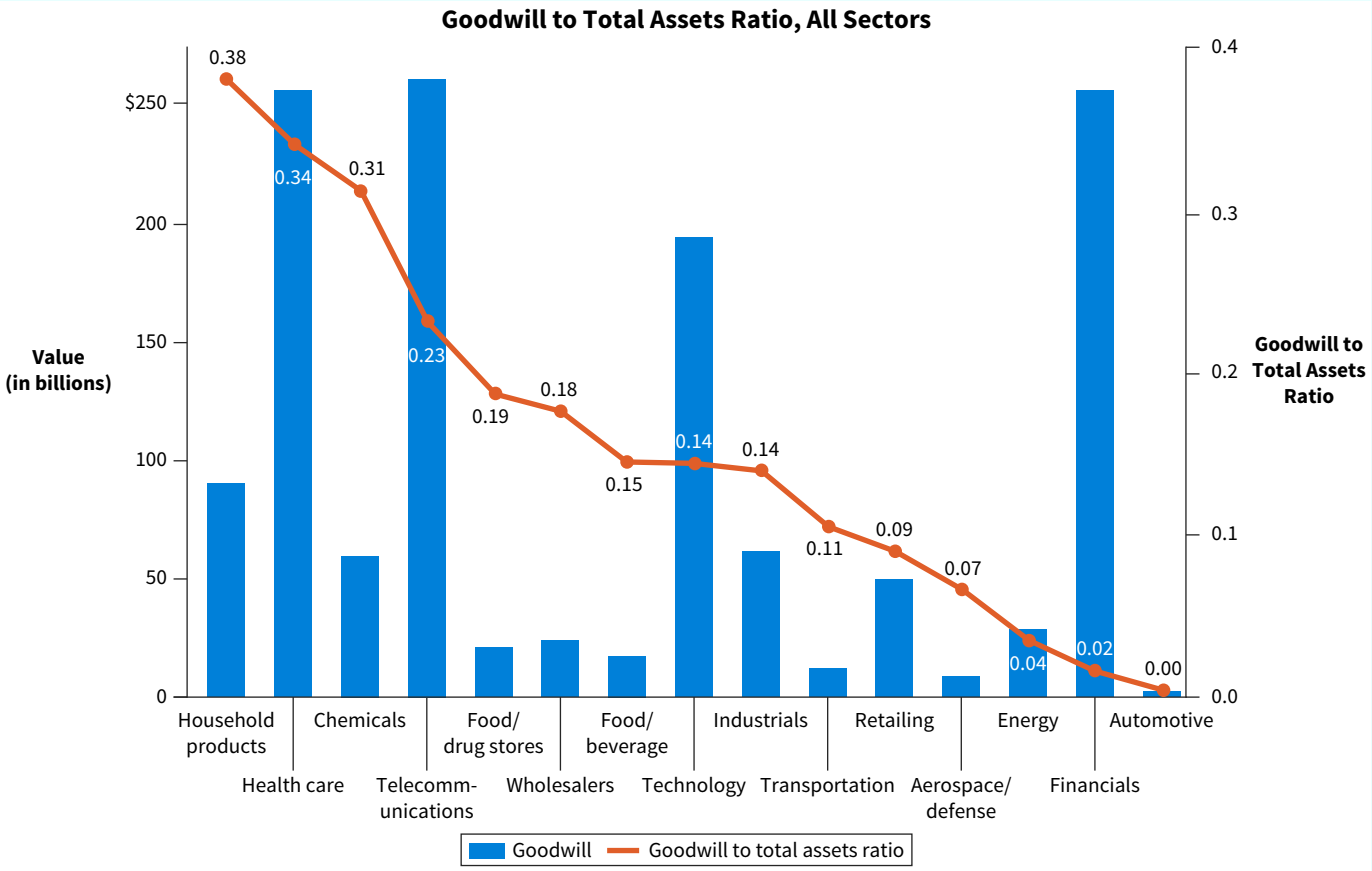
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Understand Trends in Goodwill

DA11.1 For some companies, goodwill can represent a significant portion of their total assets. Understanding trends in goodwill over time and across different industries can help managers accurately value goodwill on their balance sheet and report any potential impairments.

Using data visualizations like the following graph can help managers easily track these trends in goodwill over time and benchmark against other industries.



Required

For this exercise, you will assume the role of a financial analyst charged with understanding goodwill for purposes of impairment testing. To help you better understand goodwill behaviors, you will use a dashboard of visualizations to answer questions about goodwill balances across different industry sectors and specific companies.

Go to Wiley Course Resources for complete details and instructions.

DA11.2 Data visualizations not only allow us to compare and contrast various financial metrics, like goodwill relative to total assets, but they allow managers to formulate insights around the behavior of an item like goodwill and how that will impact the financial statements.

Required

Using the data visualizations from DA11.1, you will consider what factors may have contributed to changes in the goodwill balances for select companies and the impact of those changes on their financial statements.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics for Goodwill Ratio Analysis

Excel

DA11.3 Evaluating trends in financial statement metrics over time and benchmarking those results against other companies can provide helpful insights into a company's own financial outlook. Excel allows us to pull publicly available financial data from other companies, calculate ratios, and even graph those results to visualize important relationships among the data.

Required

In this exercise, you will have access to financial data from more than 20 public companies across different industries. Using Excel, you will calculate various ratios related to each company's goodwill, sort the results, and create a report that summarizes your analysis.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 5

Compare the accounting for intangible assets under GAAP and IFRS.

There are some significant differences between IFRS and GAAP in the accounting for both intangible assets and impairments. IFRS related to intangible assets is presented in *IAS 38* ("Intangible Assets"). IFRS related to impairments is found in *IAS 36* ("Impairment of Assets"). Following are the key similarities and differences between GAAP and IFRS related to intangible assets.

Similarities

- Like GAAP, under IFRS intangible assets (1) lack physical substance and (2) are not financial instruments. In addition, under IFRS an intangible asset is identifiable. To be identifiable, an intangible asset must either be separable from the company (can be sold or transferred) or it arises from a contractual or legal right from which economic benefits will flow to the company. Fair value is used as the measurement basis for intangible assets under IFRS, if it is more clearly evident.
- With issuance of a converged statement on business combinations (*IFRS 3* and *SFAS No. 141—Revised*), IFRS and GAAP are very similar for intangibles acquired in a business combination. That is, companies recognize an intangible asset separately from goodwill if the intangible represents contractual or legal rights or is capable of being separated or divided and sold, transferred, licensed, rented, or exchanged. In addition, under both GAAP and IFRS, companies recognize acquired in-process research and development (IPR&D) as a separate intangible asset if it meets the definition of an intangible asset and its fair value can be measured reliably.
- As in GAAP, under IFRS the costs associated with research and development are segregated into the two components. Costs in the research phase are always expensed under both IFRS and GAAP.

Differences

- IFRS permits revaluation of limited-life intangible assets. Revaluations are not permitted for goodwill and other indefinite-life intangible assets.
- IFRS permits some capitalization of internally generated intangible assets (e.g., brand value) if it is probable there will be a future benefit and the amount can be reliably measured. GAAP requires expensing of all costs associated with internally generated intangibles.
- IFRS requires an impairment test at each reporting date for long-lived assets and intangibles, and records an impairment if the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of the asset's fair value less costs to sell and its value-in-use. **Value-in-use** is the future cash flows to be derived from the particular assets, discounted to present value. Under GAAP, impairment loss is measured as the excess of the carrying amount over the asset's fair value.
- IFRS allows reversal of impairment losses when there has been a change in economic conditions or in the expected use of limited-life intangibles. (Reversals of goodwill impairments are not allowed.) Under GAAP, impairment losses cannot be reversed for assets to be held and used; the impairment loss results in a new cost basis for the asset. IFRS and GAAP are similar in the accounting for impairments of assets held for disposal.
- Under IFRS, costs in the development phase of a research and development project are capitalized once technological feasibility (referred to as **economic viability**) is achieved.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 12

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Current Liabilities and Contingencies

WHAT are current liabilities?

Current liabilities are defined as "obligations whose liquidation is reasonably expected to require use of existing resources properly classified as current assets or the creation of other current liabilities." Commonly reported current liabilities are those related to payables (e.g., accounts, notes, and income taxes) and unearned revenues (e.g., gift cards and customer advances).

Target Corporation
(dollars in millions)

		Feb. 1, 2020
Current assets		$12,902
Long-term assets		29,877
Total assets		$42,779
Current liabilities		
Accounts payable	**$9,920**	
Accrued and other current liabilities	**4,406**	
Current portion of long-term debt	**161**	
Total current liabilities		**14,487**
Noncurrent (Long-term) liabilities		16,459
Total liabilities		30,946
Total stockholders' equity		11,833
Total liabilities and stockholders' equity		$42,779

WHY is information about current liabilities important?

Investors and creditors are interested in a company's liquidity, which is the ability of a company to pay its current liabilities on time. Short-term liquidity ratios, such as the current ratio (current assets ÷ current liabilities), are therefore calculated when analyzing a company. For example, as indicated, Target's current ratio is less than 1 ($12,902 ÷ $14,487 = .89). This liquidity ratio indicates that Target has current liabilities (due in the next year) in excess of current assets, which could signal less-than-adequate liquidity. In general, the greater a company's liquidity, the lower its risk of failure.

HOW do we account for current liabilities?

Current liabilities are usually recorded and reported in financial statements at their full maturity value. Because of the short time periods involved, frequently less than one year, the difference between the present value of a current liability and the maturity value is usually not large. Companies record unearned revenues as current liabilities until the performance obligation is satisfied. Liabilities for contingencies are recorded when future payments are both reasonably estimable and probable.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 12.1 Describe the nature, valuation, and reporting of current liabilities in the form of payables.	**12.1 Current Liabilities** • Payable transactions • Employee-related payables	Examples **12.1** Accounts Payable **12.2** Interest-Bearing Note Payable **12.3** Zero-Interest-Bearing Note **12.4** Sales Taxes Payable **12.5** Income Taxes Payable **12.6** Unemployment Taxes **12.7** Employee-Related Liabilities **12.8** Vacation Pay **12.9** Bonus Payable Put It into Practice **LO 12.1** Record Payables
LO 12.2 Describe the nature, valuation, and reporting of current liabilities in the form of unearned revenues.	**12.2 Unearned Revenues** • Ticket revenue • Gift cards • Customer advances	Examples **12.10** Unearned Ticket Revenue **12.11** Gift Cards **12.12** Customer Advances Put It into Practice **LO 12.2** Record Unearned Revenues
LO 12.3 Explain the accounting for loss and gain contingencies.	**12.3 Contingencies** • Loss contingencies • Gain contingencies	Examples **12.13** Guarantee **12.14** Expropriation **12.15** Lawsuit **12.16** Assurance-Type Warranty **12.17** Warranties **12.18** Consideration Payable **12.19** Gain Contingency Put It into Practice **LO 12.3** Account for Contingencies
LO 12.4 Indicate how to present and analyze liabilities and contingencies.	**12.4 Presentation and Decision Analysis** • Presentation • Analysis	Example **12.20** Classification of Debt

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

12.1 Current Liabilities

LEARNING OBJECTIVE 1

Describe the nature, valuation, and reporting of current liabilities in the form of payables.

Many of you probably have an obligation to make a rent payment, a tuition payment, or a car payment. If you have one of these obligations (or something similar), you have a **liability** because you owe money to another party. Companies also have liabilities, such as accounts payable, notes payable, and salaries payable. In some cases, companies have difficulty determining whether they have a liability or not. Consider these examples:

- Astra Inc. reports as a liability "anticipated losses from pending transactions."
- Henlow Co. may be sued by a customer who was injured on Henlow's property. If sued, Henlow's attorney believes it is possible that the company may lose the suit.

What do you think? Should either of these companies record a liability? The answer is no, and here is why. For a liability to be recorded, it must meet all three of these conditions.

1. Probable future sacrifices of economic benefits (cash, goods, services).
2. Arises from present obligation (it is unavoidable).
3. The present obligation arises from a past transaction or event (occurred in the past).[1]

Using these criteria, Astra Inc. should not record a liability because "anticipated losses" have not yet occurred.

Pending transactions mean that the condition that might cause the loss has not taken place. So where is the liability? Where is the obligation? Henlow also does not have to record a liability because Henlow's attorney believes it is only possible and not probable that Henlow will lose the case. In addition, Henlow does not have a present obligation because the injured party has not yet sued.

Because liabilities involve future disbursements of assets or services, one of their most important features is the date on which they are payable. A company must satisfy currently maturing obligations in the ordinary course of business to continue operating. Liabilities with a more distant due date do not, as a rule, represent a claim on the company's current resources. They are therefore in a slightly different category. This feature gives rise to the basic division of liabilities into (1) current liabilities and (2) long-term debt.

Current liabilities are the obligations that a company reasonably expects to liquidate either through the use of current assets or the creation of other current liabilities. **[1]** (See the FASB Codification References near the end of the chapter.) This concept includes:

1. Payables resulting from the acquisition of goods and services, such as accounts payable, wages payable, taxes payable, and so on.
2. Collections received in advance for the delivery of goods or performance of services, such as unearned rent revenue or unearned subscriptions revenue.
3. Other liabilities whose liquidation will take place within the operating cycle, such as the portion of long-term bonds to be paid in the current period or short-term obligations arising from the purchase of equipment or other assets.

[1] "Elements of Financial Statements of Business Enterprises," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: FASB, 1980).

Payable Transactions

Accounts Payable

Accounts payable, or **trade accounts payable**, are balances owed to others for goods, supplies, or services purchased on open account. Accounts payable arise because of the time lag between the receipt of services or acquisition of assets and the payment for them. The terms of the sale (e.g., 2/10, n/30 or 1/10, E.O.M.) usually state this period of extended credit, which is commonly 30 to 60 days.

Example 12.1
Accounts Payable

FACTS Assume that **Target** purchases $800,000 of merchandise from **Clorox** to sell in its stores, terms 2/10, net30.

QUESTION What is the entry that Target should make to record the purchase of these goods, assuming it uses the perpetual inventory system?

SOLUTION

To record goods purchased on account:

Inventory	800,000	
Accounts Payable		800,000

Most companies record liabilities for purchases of goods upon receipt of the goods. If control has passed to the purchaser before receipt of the goods, the purchaser should record the transaction at the time of transfer of control.

- A company must pay special attention to transactions occurring near the end of one accounting period and at the beginning of the next.
- A company also needs to make sure that the record of goods received (the inventory) agrees with the liability (accounts payable), and that it records both in the proper period.

Measuring the amount of an account payable is straightforward. The invoice received from the vendor or creditor specifies the due date and the exact outlay in money that is necessary to settle the account. The only calculation that may be necessary concerns the amount of a purchase discount, if one is offered. We show the entries related to accounts payable and purchase discounts in Chapter 7.

Notes Payable

Notes payable are written promises to pay a certain sum of money on a specified future date. They may arise from purchases, financing, or other transactions. Some industries require notes (often referred to as **trade notes payable**) as part of the sales/purchases transaction instead of the normal extension of credit. Notes payable to banks or loan companies generally arise from cash loans. Companies classify notes as short-term or long-term, depending on the payment due date. Notes may also be interest-bearing or zero-interest-bearing.

Example 12.2
Interest-Bearing Note Payable

FACTS Assume that **Wells Fargo** agrees to lend $100,000 to **EatStreet** on March 1, 2025, if EatStreet signs a $100,000, 6%, 4-month note. Therefore, the principal and interest on the note would be due on July 1, 2025.

QUESTION What are the entries that EatStreet needs to make to record the note from March 1, 2025, through maturity?

SOLUTION

To record issuance of a 6%, 4-month note to Wells Fargo:

March 1

Cash	100,000	
Notes Payable		100,000

If EatStreet prepares financial statements semiannually, it makes the following adjusting entry to recognize interest expense and interest payable of $2,000 ($100,000 × .06 × 4/12) at June 30.

June 30

Interest Expense	2,000	
Interest Payable		2,000

If EatStreet prepares financial statements monthly, its adjusting entry at the end of each month is $500 ($100,000 × .06 × 1/12).

At maturity (July 1), EatStreet must pay the face value of the note ($100,000) plus $2,000 interest ($100,000 × .06 × 4/12). EatStreet records payment of the note and accrued interest as follows.

July 1

Notes Payable	100,000	
Interest Payable	2,000	
Cash		102,000

Zero-Interest-Bearing Note Payable

A company may issue a zero-interest-bearing note instead of an interest-bearing note. A zero-interest-bearing note does not explicitly state an interest rate on the face of the note. **Interest is still charged, however.** At maturity, the borrower must pay back an amount greater than the cash received at the issuance date. In other words, the borrower receives in cash the present value of the note. The present value equals the face value of the note at maturity minus the interest or discount charged by the lender for the term of the note. In essence, the bank takes its fee "upfront" rather than on the date the note matures.

Example 12.3
Zero-Interest-Bearing Note

FACTS Assume that **EatStreet** issues a $102,000, 4-month, zero-interest-bearing note to **Wells Fargo**. The present value of the note is $100,000.[2]

QUESTION What is the entry to record the note on March 1?

SOLUTION

To record the issuance of a 4-month, zero-interest-bearing note to Wells Fargo:

March 1

Cash	100,000	
Discount on Notes Payable	2,000	
Notes Payable		102,000

EatStreet credits the Notes Payable account for the face value of the note, which is $2,000 more than the actual cash received. It debits the difference between the cash received and the face value of the note to Discount on Notes Payable.

Discount on Notes Payable is a contra account to Notes Payable and therefore is subtracted from Notes Payable on the balance sheet. Illustration 12.1 shows the balance sheet presentation on March 1.

[2]This example uses a bank discount rate of 5.96%, with monthly compounding, to determine the present value.

Current liabilities		
Notes payable	$102,000	
Less: Discount on notes payable	2,000	$100,000

ILLUSTRATION 12.1
Balance Sheet Presentation of Discount

The amount of the discount, $2,000 in this case, represents the total cost of borrowing $100,000 for 4 months. That is, the Discount on Notes Payable balance **represents interest expense for the 4-month period.**

- EatStreet should not debit Interest Expense for $2,000 on March 1 because that would imply all of the interest expense occurred in March.
- Instead, EatStreet is going to allocate the balance in the Discount on Notes Payable account to interest expense over the 4-month period.

We are going to discuss the Discount on Notes Payable account and this allocation process later in Chapter 13 when we revisit issues related to notes payable.

Accounting Matters — Is It a Liability?

In response to the global health pandemic in 2020, the Federal Government executed the Cares Act, which included over $500 billion of government loans to businesses under the Paycheck Protection Program (PPP). Under the PPP, these loans were eligible for forgiveness, but only if certain criteria were met.

And those criteria seemed to be a moving target! With little guidance, some companies reported the funds received as revenue or a reduction of expense on their income statement, while others were reporting a liability. Said David Zion, head of accounting and tax research at the **Zion Research Group**, "Normally, what sounds like a pretty easy thing to answer—is this a debt or not?—can become very complicated."

To ensure transparency, standard-setters have strongly encouraged recipients of these funds to bolster their note disclosures to help users understand where the amounts are reflected in the financial statements. "If different companies treat this differently, we would view it as being a symptom of the lack of guidance, and not that anybody's trying to confuse investors," said Eric Kuby, chief investment officer of **North Star**.

Source: "Companies Unclear on How to Account for Coronavirus Aid," *Wall Street Journal* (June 14, 2020).

Sales Taxes Payable

When you shop at retailers like **Walmart**, **Best Buy**, and **Gap**, you must pay sales taxes on the goods you purchase. What happens to those sales tax dollars once they are collected by the retailer? Once the retailer collects from you, the retailer now owes the sales tax amount to the various state and local taxing authorities. The key word there is "owes," which means a liability has been created.

As Illustration 12.2 shows, the retailer is acting as a collection agent for the government and must remit the sales tax dollars to the government after they are collected. The Sales Taxes Payable account should reflect the liability for sales taxes due various governments.

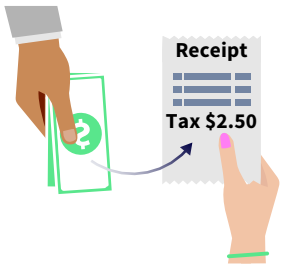
The following entry illustrates use of the Sales Taxes Payable account on a sale of $3,000 when a 4% sales tax is in effect.

Cash	3,120	
Sales Revenue		3,000
Sales Taxes Payable (3,000 × .04)		120

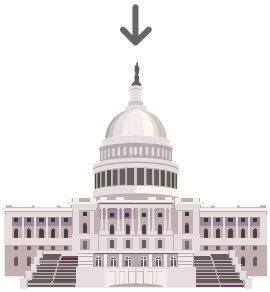
A key factor to note is that with sales to customers, sales tax is an expense for the customer, **not** the retailer. In the journal entry above, there is a liability for the retailer, Sales Taxes Payable, but not an expense.

Many companies do not separate the sales tax and the amount of the sale at the time of sale. Instead, the company credits both amounts in total in the Sales Revenue account. Then, to reflect correctly the actual amount of sales and the liability for sales taxes, the company would debit (reduce) the Sales Revenue account for the amount of the sales taxes due the government and would credit (increase) the Sales Taxes Payable account for the same amount.

ILLUSTRATION 12.2
The Sales Taxes Payable Process



Customer pays sales tax to retailer.



Retailer remits sales tax dollars to the government after they are collected.

Example 12.4
Sales Taxes Payable

FACTS Marshal Co.'s Sales Revenue account balance of $150,000 includes sales taxes of 4%.

QUESTION What is the entry to record sales taxes payable?

SOLUTION

The amount recorded in the Sales Revenue account is comprised of the sales amount plus sales tax of 4% of the sales amount. Sales therefore are $144,230.77 ($150,000 ÷ 1.04*), and the sales tax liability is $5,769.23 ($144,230.77 × 0.04; or $150,000 − $144,230.77). The following entry would record the amount due the taxing unit.

Sales Revenue	5,769.23	
Sales Taxes Payable		5,769.23

*To arrive at this amount, given x = sales revenue, use the following equation.

$$x + .04x = \$150{,}000$$
$$1.04x = \$150{,}000$$
$$x = \$150{,}000 \div 1.04$$

Income Taxes Payable

Since corporations are considered separate, legal entities, they must pay income tax on their annual earnings just like you and me. Federal or state income tax varies in proportion to the amount of annual income.

- Using the best information and advice available, a business must prepare an income tax return and compute the income taxes payable resulting from the operations of the current period.
- Corporations should classify as a current liability the taxes payable on taxable income, as computed on the tax return.

Unlike a corporation, proprietorships and partnerships are not taxable entities. Because the individual proprietor and the members of a partnership are subject to personal income taxes on their share of the business's taxable income, income tax liabilities do not appear on the financial statements of proprietorships and partnerships.

Example 12.5
Income Taxes Payable

FACTS Margo Company reports taxable income of $300,000, and its tax rate is 20%.

QUESTION What is the entry to record income taxes payable?

SOLUTION

In this case, Margo's income taxes payable is $60,000 ($300,000 × .20) and is recorded as follows.

Income Tax Expense	60,000	
Income Taxes Payable		60,000

The Income Taxes Payable balance will be remitted to the government throughout the year, usually on a quarterly basis.

Differences between taxable income under the tax laws and accounting income under generally accepted accounting principles (GAAP) sometimes occur. Because of these differences, the amount of income taxes payable to the government in any given year may differ substantially from income tax expense as reported on the financial statements. Chapter 18 is devoted solely to income tax matters and presents an extensive discussion of this complex topic.

Employee-Related Payables

A major cost for most companies is salary and wages for its employees. In addition to salaries and wages, companies also incur related fringe benefit costs such as:

- Payments related to Social Security and unemployment insurance.
- Healthcare coverage and retirement benefits.
- Compensated absences for vacations, sick leave, holidays, parental leave, and jury duty.

Fringe benefits can be substantial as companies continue to examine the value of benefit packages for attracting the best employees. In considering your own employment, you should understand the entire compensation package—salaries, wages, and benefits—in making your job decision.

Companies report as a current liability amounts owed to employees for salaries or wages at the end of an accounting period. In addition, they also report as current liabilities the following items related to employee compensation.

1. Payroll deductions.
2. Compensated absences.
3. Bonuses.

Payroll Deductions

If you have ever received a paycheck, then you know your employer withholds money from your paycheck, as shown in **Illustration 12.3**. In accounting, these withholdings are referred to as payroll deductions.

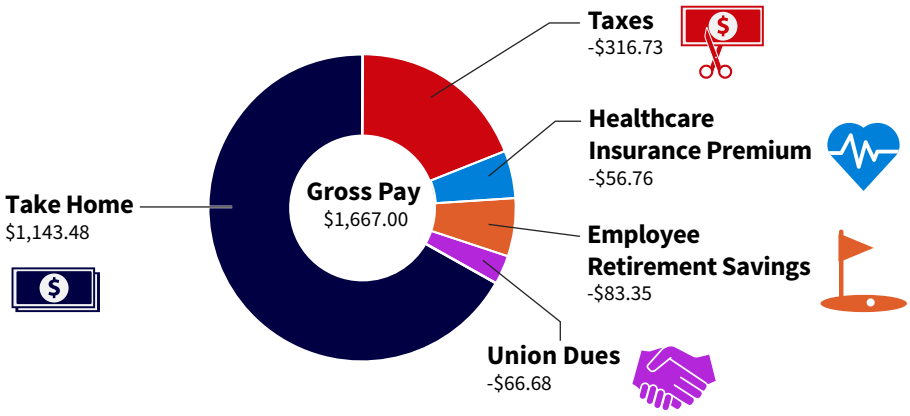


ILLUSTRATION 12.3
Payroll Deductions

- The most common types of payroll deductions are taxes, healthcare insurance premiums, employee retirement savings, and union dues.
- Just like in our discussion of sales taxes, the company is acting as an agent to collect the payroll deductions from you and then remits the amounts to the proper government agency or organization.

If the company has not remitted the amounts deducted to the proper authority by the end of the accounting period, it should recognize these deductions as current liabilities.

Social Security Taxes Social Security legislation provides federal **Old Age, Survivor, and Disability Insurance (OASDI)** benefits for certain individuals and their families. Funds for these payments come from taxes levied on both the employer **and** the employee. The government taxes both the employer and the employee at the same rate, which is currently 6.2% based on the employee's gross pay up to a $142,800 annual limit. The OASDI tax is usually referred to as **FICA (the Federal Insurance Contribution Act)**, which is probably what you see on your paycheck being withheld.

6.2%	+	6.2%	=	12.4%
Amount of employee's gross pay deducted		Employer's matching contribution		Total contribution for Social Security

In addition, the federal health insurance program for the aged—popularly known as **Medicare**—alleviates the high cost of medical care for those over age 65. A tax, paid by both the employee and the employer at the rate of 1.45% on the employee's total compensation, finances the Basic Plan, which provides for hospital and other institutional services.[3]

- The combination of FICA and the federal Medicare tax is commonly referred to as the **Social Security tax**.
- The combined rate for these taxes, 7.65% on an employee's wages to $142,800 and 1.45% in excess of $142,800, changes intermittently by acts of Congress.

Companies should report the amount of unremitted employee and employer Social Security tax on gross wages paid as a current liability.

Income Tax Withholding and Other Payroll Deductions Federal and some state income tax laws require employers to withhold from each employee's pay the applicable income tax due on those wages. The employer computes the amount of income tax to withhold according to a government-prescribed formula or withholding tax table. That amount depends on the length of the pay period and each employee's taxable wages, marital status, and claimed dependents.

The Social Security and income taxes are required to be deducted from an employee's gross pay. As indicated earlier, there are other optional items that employees may choose to have withheld from their paychecks, such as premiums for health, life, and dental insurance, contributions to a retirement plan such as a 401K, and union dues if an employee is eligible to be a member of a union. Just like with the required tax withholdings, the employer is simply acting as a collection agent and will remit the withheld amounts to the various organizations, such as the health insurance company, the retirement plan trustee, and the union organization. **These amounts are not an expense for the employer, but rather a current liability to the employer until the amounts are remitted to the various organizations.**

Unemployment Taxes Payroll taxes levied by the federal government in cooperation with state governments provides a system of unemployment insurance. The federal-state unemployment programs provide financial assistance to eligible workers who may have been laid off through no fault of their own. All employers who meet the following criteria are subject to the **Federal Unemployment Tax Act (FUTA)**.

- Those who paid wages of $1,500 or more during any calendar quarter in the year or preceding year, or
- Those who employed at least one individual on at least one day in each of 20 weeks during the current or preceding calendar year.

In general, only employers pay the unemployment tax. Therefore, it is **not** a payroll deduction for employees. The unemployment tax is an expense for the employer and is debited to Payroll Tax Expense, which is included in operating expenses on the income statement. The employer credits a current liability for the amount of the unemployment tax until the amount is remitted to the various government agencies.

State unemployment compensation laws differ both from the federal law and among various states. Therefore, employers must refer to the unemployment tax laws in each state in which they pay wages and salaries. However, all states provide for some form of **merit rating**, which reduces the state contribution rate.

- Employers who display by their benefit and contribution experience that they provide steady employment may receive this reduction—if the size of the state fund is adequate.
- In order not to penalize an employer who has earned a reduction in the state contribution rate, federal law allows a credit of 5.4%, even when the effective state contribution rate is less than 5.4%.

[3]Under provisions of the Affordable Care Act, the Medicare rate for some high-income taxpayers may be higher.

Here is how it works:

1. The rate of this tax is **6%** on the first $7,000 of compensation paid to each employee during the calendar year.
2. The employer receives a tax credit not to exceed **5.4%** for contributions paid to a state plan for unemployment compensation.
3. Thus, if an employer is subject to a state unemployment tax (SUTA) of 5.2%, **it pays only 0.8% tax to the federal government (6% − 5.2%)**

Example 12.6 Unemployment Taxes

FACTS Central Perk Coffee has a taxable payroll of $100,000. It is subject to a federal unemployment rate of 6% and a state contribution rate of 5.7%. However, its stable employment experience reduces the company's state rate to 1%.

QUESTION What is the amount of Central Perk's unemployment taxes?

SOLUTION

Central Perk computes its federal and state unemployment taxes as follows.

State unemployment tax (SUTA) (.01 × $100,000)	$1,000
Federal unemployment tax (FUTA) [(.060 − .054) × $100,000]	600
Total federal and state unemployment tax	$1,600

The accounting for employee-related liabilities is presented in Example 12.7.

Example 12.7 Employee-Related Liabilities

FACTS Assume a weekly payroll of $10,000 entirely subject to FICA and Medicare (7.65%), federal (0.8%) and state (4%) unemployment taxes, with income tax withholding of $1,320 and union dues of $88 deducted.

QUESTION What is the entry to record salaries and wages and the related payroll taxes?

SOLUTION

To record salaries and wages paid and the employee payroll deductions:

Salaries and Wages Expense	10,000	
Withholding Taxes Payable		1,320
FICA Taxes Payable ($10,000 × .0765)		765
Union Dues Payable		88
Cash		7,827

To record employer payroll taxes:

Payroll Tax Expense	1,245	
FICA Taxes Payable		765
FUTA Taxes Payable ($10,000 × .008)		80
SUTA Taxes Payable ($10,000 × .04)		400

In Example 12.7, total FICA Taxes Payable is $1,530 ($765 + $765), representing both the employee and employer share of the tax. When the employer remits the amounts to the various agencies, the payable accounts are debited and cash is credited. At the end of the period, any unremitted taxes payable accounts would be grouped together and listed as Payroll Taxes Payable in the current liabilities section of the employer's balance sheet.

Illustration 12.4 summarizes payroll deductions and liabilities.

ILLUSTRATION 12.4
Summary of Payroll Liabilities

Item	Whose Expense	
Income tax withholding FICA taxes—employee share Union dues	Employee	Employer reports these amounts as liabilities until remitted.
FICA taxes—employer share Federal unemployment State unemployment	Employer	

Compensated Absences

We commented earlier about the significance of fringe benefits as part of the overall pay package. One important type of fringe benefit involves compensated absences. **Compensated absences** are paid absences from employment for such items as vacations, illness, holidays, and jury duties. Generally, the two most significant fringe benefits related to compensated absences are vacation pay and sick pay. Companies should accrue a liability for the cost of compensation for future absences if **all of the following conditions** exist (see **Underlying Concepts**). **[2]**

Underlying Concepts

These four conditions not only align with the definition of a liability but also with the expense recognition principle, which requires that a company report the expense for services in the period consumed.

1. The employer's obligation relating to employees' rights to receive compensation for future absences is attributable to employees' services **already rendered**.
2. The obligation relates to the rights that **vest or accumulate**.
3. Payment of the compensation is **probable**.
4. The amount can be **reasonably estimated**. **[3]**

If an employer meets conditions (1), (2), and (3) but does not accrue a liability because of a failure to meet condition (4), it should disclose that fact.

Vested Rights **Vested rights** exist when an employer has an obligation to make payment to an employee even after terminating his or her employment. Thus, vested rights are not contingent on an employee's future service. For example, assume that you earn four days of vacation pay as of December 31, the end of your employer's fiscal year. Company policy is that you will be paid for this vacation time even if you terminate employment. In this situation, your four days of vacation pay are vested, and your employer must accrue the vested amount.

Accumulated Rights If we assume that your vacation days are not vested but that you can carry the four days over into later periods, then you have **accumulated rights**. Although the rights are not vested, they are accumulated rights for which the employer must make an accrual. However, the amount of the accrual is adjusted to allow for estimated forfeitures due to turnover.

Companies should recognize the expense and related liability for compensated absences in the year earned by employees. For example, if new employees receive rights to two weeks' paid vacation at the beginning of their second year of employment, a company considers the vacation pay to be earned during the first year of employment.

Current or Estimated Rate What salary or wage rate should a company use to accrue the compensated absence cost—the current rate or an estimated future rate? GAAP is silent on this subject. Therefore, companies will likely use the current rather than future salary or wage rate. The future rate is less certain and raises time value of money issues.

Example 12.8
Vacation Pay

FACTS Assume that **PupJoy** began operations on January 1, 2025. The company employs 10 individuals and pays each $480 per week. Employees earned 20 unused vacation weeks in 2025. In 2026, the employees used the vacation weeks, but now they each earn $540 per week.

QUESTION What are the entries for the vacation pay that was accrued in 2025 and paid in 2026?

SOLUTION

To record accrual of vacation pay:

December 31, 2025

Salaries and Wages Expense	9,600	
Salaries and Wages Payable ($480 × 20)		9,600

To record payment of vacation pay:

During 2026

Salaries and Wages Payable	9,600	
Salaries and Wages Expense	1,200	
Cash ($540 × 20)		10,800

At December 31, 2025, the company reports on its balance sheet a liability of $9,600. In 2026, the use of the vacation weeks extinguishes the liability.

Note that PupJoy records the difference between the amount of cash paid and the reduction in the liability account as an adjustment to Salaries and Wages Expense in the period when paid. This difference arises because it accrues the liability account at the rates of pay in effect during the period when employees **earned** the compensated time.

The cash paid, however, depends on the rates in effect during the period when employees **used** the compensated time. If PupJoy used the future rates of pay to compute the accrual in 2025, then the cash paid in 2026 would equal the liability.

Sick Pay A modification of the general rules relates to the issue of **sick pay** as follows.

- If sick pay benefits vest, a company must accrue them.
- If sick pay benefits accumulate but do not vest, a company may choose whether to accrue them or not.

Companies may administer compensation designated as sick pay in one of two ways.

1. In some companies, employees receive sick pay only if illness causes their absence. Therefore, these companies may or may not accrue a liability because its payment depends on future employee illness.
2. Other companies allow employees to accumulate unused sick pay and take compensated time off from work even when not ill. For this type of sick pay, a company must accrue a liability because the company will pay it, regardless of whether employees become ill.

To attract talented employees, employers—small and large—therefore include some form of health insurance, as well as payment for compensated absences in the total compensation plan.

What if you are the entrepreneurial, self-employed type? It is important to recognize the all-in costs of such pay and packages. That is, if you are self-employed, you must earn substantially more per hour to pay your own benefit costs **plus** your share of FICA taxes. So, you may like the idea of being your own boss but lack of access to more affordable group insurance, payment for FICA taxes as both an employer and employee, and lack of retirement contributions are not in your favor.[4]

Accounting Matters — Salary, Benefits, and Gen Z

Back in Chapter 4, we talked about some limitations of the balance sheet, namely, there is no reliable way to measure the value of a strong workforce. And while good talent may not meet the definition of an asset, that does not stop companies from investing time and resources on recruiting, and keeping, talented employees.

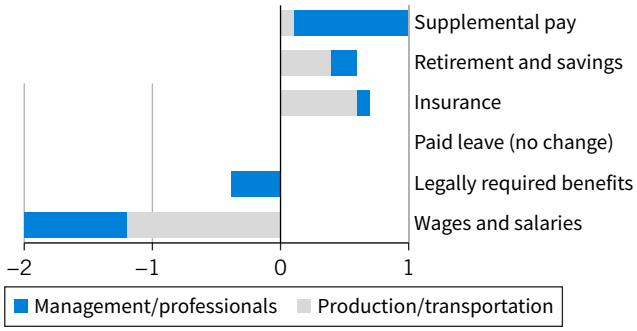
[4] "How Much Do I Have to Make as an Entrepreneur or Contractor to Replace My Day Job Income?" *Financial Sumarai* (accessed October 28, 2020).

However, what attracts good employees has changed over time (as indicated in the adjacent chart). Now, it's not always about salary and wages, but increasingly about culture (ping pong, anyone?), work-life balance, and growth. In a recent survey of undergraduate and graduate accounting students, less than 30% of respondents ranked salary in their top four factors they look for in an internship employer.

The results showed that Gen Zs are looking for more in an employer than just a paycheck; rather, they want an employer who will invest in their development to advance their careers as well as provide good health insurance.

This is not to say that salary doesn't matter at all. With a seemingly not-so-temporary shift to remote work arrangements, many employees are taking their talent out of higher-priced cities and into the country where cost of living is significantly lower. But this shift is coming with a downward salary adjustment. While geographic-based wage rates is nothing new, taking a 10% pay cut for doing the same job has led some workers, especially in the tech industry, to cry foul. Employers will have to continually balance the value of a talented, committed workforce, along with the costs incurred, salary or otherwise, to keep their employees happy and engaged.

Total Compensation by Type and Percentage-Point Change



Source: Labor Department.

Sources: "Silicon Valley Pay Cuts Ignite Tech-Industry Covid-19 Tensions," *Wall Street Journal* (October 11, 2020); "Gen Z Considers This Benefit More Important Than Salary," *Entrepreneur.com* (June 30, 2020); and "What It Takes for Accounting Firms to Recruit Gen Z," *Journal of Accountancy* (December 1, 2019).

Bonus Agreements

Many companies give a **bonus** to certain or all employees in addition to their regular salaries or wages. Frequently, the bonus amount depends on the company's yearly profit. For example, employees at **Ford Motor Company** share in the success of the company's operations on the basis of a complicated formula using net income as its primary basis for computation. A company may consider bonus payments to employees as additional wages and should include them as an expense in determining the net income for the year.

Example 12.9
Bonus Payable

FACTS Palmer Inc. shows income for the year 2025 of $100,000. It will pay out bonuses of $10,700 in January 2026.

QUESTION What are the entries for the bonus plan in 2025 and 2026?

SOLUTION

Adjusting entry to record the bonuses:

December 31, 2025

Salaries and Wages Expense	10,700	
Salaries and Wages Payable		10,700

To record the bonus paid:

During January 2026

Salaries and Wages Payable	10,700	
Cash		10,700

Palmer should show the expense account in the income statement as an operating expense. The liability, Salaries and Wages Payable, is usually payable within a short period of time. Companies should include it as a current liability in the balance sheet.

Although some companies have complex plans for determining bonus plans, research suggests that simpler plans are better. In addition, participants in these bonus arrangements want plans they can have some control over, such as net income (an internal measure), rather than a factor such as total return to stockholders (an external measure).

Put It into Practice LO 12.1
Record Payables

FACTS Presented below are selected transactions of Bonazza Corporation for the current month ending December 31.

1. On December 1, borrowed $90,000 by signing a $90,000, 8%, 6-month note.
2. Bonazza uses the perpetual inventory system and the gross method of accounting for purchase discounts. On December 2, Bonazza purchased $40,000 of inventory items, term 2/10, net 30 FOB shipping point. On December 10, Bonazza paid for the goods and related freight costs of $1,200.
3. During December, cash sales total $800,000. A 5% sales tax on these sales, collected in addition to the $800,000, must be remitted to the state by the fifteenth day of the following month.
4. For December, gross salary and wages totaled $100,000. All earnings are subject to 7.65% FICA taxes, 4% state unemployment tax and 0.6% federal unemployment taxes, income tax withholding is $18,000. In addition, it is determined that it owes employees $6,000 in accrued vacation wages.

INSTRUCTIONS Prepare entries for these transactions, including any end of month adjusting entries that may be required.

SOLUTION

1. To record issuance of notes payable:

December 1		
Cash	90,000	
Notes Payable		90,000

To record interest for the month:

December 31		
Interest Expense	600	
Interest Payable ($90,000 × .08 × 1/12)		600

2. To record the purchase of inventory:

December 2		
Inventory	40,000	
Accounts Payable		40,000

To record payment of accounts payable:

December 10		
Accounts Payable	40,000	
Purchase Discount ($40,000 × .02)		800
Cash		39,200

To record payment for freight costs:

December 10		
Inventory	1,200	
Cash		1,200

3. To record sales tax collected:

During December		
Cash	840,000	
Sales Revenue		800,000
Sales Taxes Payable ($800,000 × .05)		40,000

4. To record salary and wages expense:

During December		
Salaries and Wages Expense	100,000	
Withholding Taxes Payable		18,000
FICA Taxes Payable ($100,000 × .0765)		7,650
Cash		74,350

To record accrued vacation pay:

Salaries and Wages Expense	6,000	
Salaries and Wages Payable		6,000

To record employer taxes payable:

Payroll Tax Expense	12,250	
FICA Taxes Payable ($100,000 × .0765)		7,650
FUTA Taxes Payable ($100,000 × .006)		600
SUTA Taxes Payable ($100,000 × .04)		4,000

12.2 Unearned Revenues

LEARNING OBJECTIVE 2

Describe the nature, valuation, and reporting of current liabilities in the form of unearned revenues.

A magazine publisher such as **Condé Nast** receives payment when a customer subscribes to *The New Yorker*. An airline company such as **American Airlines** sells tickets for future flights. And software companies like **Microsoft** issue coupons that allow customers to upgrade to the next version of its software. How do these companies account for **unearned (deferred) revenues** that they receive before delivering goods or rendering services?

- When a company receives an advance payment, it debits Cash and credits a current liability account identifying the source of the unearned revenue.
- When a company recognizes revenue, it debits the unearned revenue account and credits an appropriate revenue account.

Illustration 12.5 shows specific unearned revenue and revenue accounts used in selected types of businesses.

ILLUSTRATION 12.5 Unearned Revenue and Revenue Accounts

Type of Business	Account Title	
	Unearned (Deferred) Revenue (Balance Sheet)	Revenue (Income Statement)
Airline	Unearned Ticket Revenue	Passenger Revenue
Magazine publisher	Unearned Subscription Revenue	Subscription Revenue
Hotel	Unearned Rent Revenue	Rent Revenue
Retailers	Unearned Gift Card Revenue	Sales Revenue

The balance sheet reports obligations for any commitments that are redeemable in goods and services. The income statement reports revenues related to performance obligations satisfied during the period.

Ticket Revenue

Your college football team is set to have a great season, and student season tickets are a hot item. So, when you receive the application for season tickets, you are more than willing to send in payment of $240 for the home game package of five home games. When you receive the link to the tickets, you have an asset and the university has an unearned revenue until the game is held.

Example 12.10
Unearned Ticket Revenue

FACTS On August 6, Allstate University sells 10,000 season football tickets at $50 each for its five-game home schedule. Its first game will be played on September 7.

QUESTION What are the entries for Allstate on August 6 and September 7?

SOLUTION

To record sale of 10,000 season tickets:

August 6

Cash	500,000	
Unearned Ticket Revenue (10,000 × $50)		500,000

To record ticket revenue for first game:

September 7

Unearned Ticket Revenue (2,000 × $50)	100,000	
Ticket Revenue		100,000

As subsequent games are played, Allstate satisfies a performance obligation and records ticket revenue (and reduces Unearned Ticket Revenue).

In Example 12.10, Allstate reports Unearned Ticket Revenue as a current liability in the balance sheet as the school has a performance obligation to complete the home football season, which is generally four months long. As the school recognizes revenue, it reclassifies the amount from Unearned Ticket Revenue to Ticket Revenue. Unearned revenue is material for some companies. In the airline industry, for example, tickets sold for future flights represent almost 50% of total current liabilities.

Gift Cards

What is the most popular gift that you can give someone for a birthday? One hint-- it is not Airpods, a gaming device, or clothing. The answer is a gift card. Gift cards are big business. For example, **Starbucks** recently reported a gift card liability of $1.3 billion, **Amazon.com** reported a similar liability of $4.7 billion, and **Chipotle** reported a $105.4 million liability.

Gift cards are used by companies to attract new customers and to improve sales. For example, when Amazon sells a gift card to you, it is receiving a nonrefundable payment for goods and services that your gift-card recipient will have the right to receive in the future. As a result, Amazon does not report gift card revenue on the date you buy the card, but rather reports a liability because it has not satisfied its performance obligation to the person you give the card. Amazon then recognizes revenue related to the gift cards using the proportion of the gift cards redeemed divided by the number of gift cards estimated to be redeemed.

Example 12.11
Gift Cards

FACTS In March 2025, Haven Retailer sells 10 gift cards at $200 per gift card, or $2,000 (10 × $200). In April 2025, six of the gift cards are redeemed. Haven estimates that cost of goods sold will be 70% of the sales price, or $140 per gift card. The remaining four cards are expected to be redeemed in May 2025. Thus, 60% (6/10) of the revenue is recognized in April, and 40% (4/10) is recognized as revenue in May.

QUESTION What are the entries for the gift cards when issued and redeemed?

SOLUTION

To record sale of 10 gift cards:

March 2025

Cash (10 × $200)	2,000	
Unearned Gift Card Revenue		2,000

Unearned Gift Cards Revenue			
		3/25	2,000
4/25	1,200		
5/25	800		
			0

Sales Revenue			
		4/25	1,200
		5/25	800
			2,000

To record redemption of 6 gift cards:

April 2025

Unearned Gift Card Revenue	1,200	
Sales Revenue (6 × $200)		1,200
Cost of Goods Sold	840	
Inventory (6 × $200 × .70)		840

To record redemption of 4 remaining gift cards:

May 2025

Unearned Gift Card Revenue	800	
Sales Revenue (4 × $200)		800
Cost of Goods Sold	560	
Inventory (4 × $200 × .70)		560

In this case, Haven recognizes total gross profit of $600 ($2,000 − $840 − $560) on the sale of its gift cards.

One problem that complicates the accounting for gift cards is that you may never use the gift card (this situation is often referred to as **breakage** or forfeiture; your friends may have a less technical term for it). **Starbucks**, for example, recently recognized $60.5 million of breakage revenue, which is essentially expense-free revenue. Here is a summary:

1	2	3
If Haven estimates that it will have 20% breakage, it expects two gift cards (2 × $200 = $400) will not be redeemed.	Haven also expects $1,600 of gift cards or $1,600 ($2,000 − $400) will be redeemed.	Haven recognizes this breakage revenue ($400) as well as gift card revenue in proportion to customer redemptions of the gift cards.

For example, when customers redeem six of the eight gift cards, Haven recognizes 75% (6 ÷ 8) of the expected revenue from the redeemed gift cards as well as the breakage revenue. You use 75% because Haven estimates that only eight of the cards will be redeemed, not 10. Therefore, when it redeems six of the gift cards, it should recognize 75% of the expected breakage revenue (six cards redeemed divided by eight total cards expected to be redeemed). The entry to record the transaction in April is as follows.

Unearned Gift Card Revenue	1,500	
Sales Revenue (.75 × $1,600)		1,200
Sales Revenue (Breakage) (.75 × $400)		300

In addition, the entry to record cost of good related to this redemption is as follows.

Cost of Goods Sold	840	
Inventory (.70 × $1,200)		840

Haven does not recognize any cost of goods sold related to breakage because these gift cards are not used.

In May, when the last two gift cards are redeemed, it recognizes 25% (2 ÷ 8) of the expected revenue from the redeemed gift cards and breakage.

You should recognize that legal requirements for unredeemed gift cards vary among jurisdictions. A company should not recognize estimated breakage as revenue if unredeemed amounts must be remitted to a governmental entity in accordance with unclaimed property laws.

Customer Advances

Companies sometimes receive from a customer a deposit prior to providing a service or goods to the customer. In this situation, the company debits Cash and credits Unearned Revenue—Customer Advances. When the good or service is subsequently provided, the company debits Unearned Revenue—Customer Advances and credits the appropriate Revenue account.

Example 12.12 Customer Advances

FACTS Assume that **Ethan Allen** agrees to sell custom-made couches to Central Perk for all of its coffee shops. Ethan Allen requires Central Perk to provide a down payment of $300,000 before it designs and manufactures the couches to Central Perk's specifications. The total price for the couches is $2,000,000. The down payment is made on December 10, 2025, and the couches are completed and delivered to Central Perk's locations on March 4, 2026. Central Perk pays the remaining $1,700,000 ($2,000,000 − $300,000) due on the couches on March 4, 2026.

QUESTION What are the entries that Ethan Allen should make for this arrangement? (Ignore Cost of Goods Sold.)

SOLUTION

To record receipt of customer advance:

December 10, 2025

Cash	300,000	
Unearned Revenue—Customer Advances		300,000

Ethan Allen reports a current liability of $300,000 related to this advance on the December 31, 2025, balance sheet.

To record sale of couches:

March 4, 2026

Cash	1,700,000	
Unearned Revenue—Customer Advances	300,000	
Sales Revenue		2,000,000

In some cases, an advance payment is refundable. A **refundable deposit** refers to cash collected from a customer that a company expects to return after a specified period or when certain conditions are satisfied. For example, a company like **Alltel Corp.** often requires a deposit on equipment that customers use to connect to the Internet or to access its other services. Alltel also may receive deposits from customers as guarantees for possible damage to property. Additionally, some companies require their employees to make deposits for the return of keys or other company property. Following the receipt of the cash, the company classifies the refundable deposit as a liability on the balance sheet.

To illustrate, say you are renting an apartment where the landlord requires a security deposit of $800 to cover damages to the apartment on September 1, 2025. When the landlord receives the $800, it makes the following entry.

Cash	800	
Refundable Deposit Liability		800

We of course assume that the apartment is immaculate at the end of the lease. As a result, the landlord returns your security deposit and makes the following entry.

Refundable Deposit Lability	800	
Cash		800

The classification of customer advances and deposits as current or noncurrent liabilities depends on the time between the date of the receipt of the cash and the termination of the relationship that required the advance or deposit.

Put It into Practice LO 12.2

Record Unearned Revenues

FACTS Presented below are selected transactions of Congo Corporation for the current month ending December 31.

1. Congo publishes a magazine related to possible vacations in Africa and sells subscriptions to customers. In December, Congo sold and received $22,000 in subscriptions to customers. The magazine will be issued in February of next year.
2. In December, Congo sold 100 gift cards at $10 per gift card; 30 of the gift cards are redeemed by year-end. Congo estimates that 40 of the gift cards will not be redeemed.
3. In December, Congo rented out a portion of its office space. It received a security deposit of $5,000 which will be returned at the end of next year.

INSTRUCTIONS Prepare entries for Congo's transactions. (Ignore Cost of Goods Sold.)

SOLUTION

1. To record unearned subscription revenue:

Cash	22,000	
Unearned Subscription Revenue		22,000

2. To record unearned gift card revenue:

Cash	1,000	
Unearned Gift Card Revenue ($10 × 100)		1,000

To record revenue on gift cards redeemed:

Unearned Gift Card Revenue	300	
Sales Revenue ($10 × 30)		300

To record gift card revenue on gift card breakage:

Unearned Gift Card Revenue	200	
Sales Revenue ($10 × 40 × .50)		200

Congo estimates that it will have 40% breakage (40 gift cards will not be redeemed, totaling $400). It therefore expects 60 cards to be redeemed, not 100. When Congo records 30 of the gift cards redeemed as revenue, it also recognizes one-half (30 ÷ 60) of the revenue from expected breakage. Recall that you use 50% because Congo recognizes that customers will redeem only 60 cards, not 100. Therefore, when it redeems 30 of the gift cards, it recognizes one-half of the expected breakage revenue. Similarly, when it redeems the remaining 30 cards (according to expectations), it will recognize the remaining revenue from breakage ($10 × 40 × .50).

3. To record a liability for refundable deposits:

Cash	5,000	
Refundable Deposit Liability		5,000

12.3 Contingencies

LEARNING OBJECTIVE 3

Explain the accounting for loss and gain contingencies.

Companies often are involved in situations where uncertainty exists about whether an obligation to transfer cash or other assets has arisen and/or the amount that will be required to settle the obligation. For example:

- **Apple** may be a defendant in a lawsuit, and any payment is contingent upon the outcome of a settlement or an administrative or court proceeding.
- **Ford Motor Company** provides a warranty for a car it sells, and any payments are contingent on the number of cars that qualify for benefits under the warranty.
- **PepsiCo, Inc.** acts as a guarantor on supply contracts for their independent bottlers, any payment is contingent on nonpayment by the independent bottler.

Broadly, these situations are called contingencies. A **contingency** is "an existing condition, situation, or set of circumstances involving uncertainty as to possible loss **(loss contingency)** or gain **(gain contingency)** to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur" (see **Global View**). **[4]**

Global View

IFRS uses the term *provisions* to refer to estimated liabilities. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

Loss Contingencies

Loss contingencies involve possible losses. A liability incurred as a result of a loss contingency is by definition a contingent liability. **Contingent liabilities** depend on the occurrence of one or more future events to confirm either the amount payable, the payee, the date payable, or its existence. That is, these factors depend on a contingency.

Likelihood of Loss

When a loss contingency exists, the likelihood that the future event or events will confirm the incurrence of a liability can range from probable to remote. The FASB uses the terms **probable**, **reasonably possible**, and **remote** to identify three areas within that range and assigns the following meanings:

- **Probable**. The future event or events are likely to occur.
- **Reasonably possible**. The chance of the future event or events occurring is more than remote but less than likely.
- **Remote**. The chance of the future event or events occurring is slight.

Use of the terms probable, reasonably possible, and remote to classify contingencies involves judgment and subjectivity. **Illustration 12.6** lists examples of loss contingencies and the general accounting treatment accorded them.

Companies should accrue an estimated loss from a loss contingency only if **both** of the following conditions are met:

1. Information available prior to the issuance of the financial statements indicates that it is **probable that a liability has been incurred** at the date of the financial statements.
2. The amount of the loss can be **reasonably estimated**.

ILLUSTRATION 12.6 Accounting Treatment of Loss Contingencies

Usually Accrued

Loss related to:

- Obligations related to product warranties and product defects.
- Premiums offered to customers.

Not Accrued

Loss related to:

- Risk of loss or damage of enterprise property by fire, explosion, or other hazards.
- General or unspecified business risks.

May Be Accrued*

Loss related to:

- Threat of expropriation of assets.
- Pending or threatened litigation.
- Actual or possible claims and assessments.**
- Guarantees of indebtedness of others.
- Agreements to repurchase receivables (or the related property) that have been sold.

*Should be accrued when both criteria—probable and reasonably estimable—are met. If the loss is either probable or estimable but not both, and if there is at least a reasonable possibility that a company may have incurred a liability, it should disclose in the notes both the nature of the contingency and an estimate of the possible loss.

**Estimated amounts of losses incurred prior to the balance sheet date but settled subsequently should be accrued as of the balance sheet date.

To record a contingency loss, companies debit a loss account and credit a liability. To record a liability, a company does not need to know the exact payee nor the exact date payable. **What a company must know is whether it is probable that it incurred a liability.**

Example 12.13 Loss Contingency—Guarantee

FACTS You are the accountant for Good Person Company. Your company believes that it has the responsibility to help in its community and therefore is a big supporter of the **Boys and Girls Club**. Suppose that a few years ago, the Boys and Girls Club borrowed $3 million from Atlas Bank to build a gymnasium to improve the club's recreational activities. Good Person agreed to guarantee the borrowing, indicating that if the Boys and Girls Club defaulted on the loan, Good Person will pay the remainder of the debt due at the settlement date. Unfortunately, the club defaulted on the loan, and Good Person estimates that its contingent liability on the loan will be $1,800,000 at the settlement date.

QUESTION What is the entry, if any, to record the loss contingency?

SOLUTION

To record the contingent liability for the guarantee:

Loss on Loan Guaranty	1,800,000	
Guarantee Liability		1,800,000

In this case, a contingent **liability is recorded** in the accounts because it is probable that the future event (payment by Good Person) will occur, and the amount of the **liability** can be reasonably estimated. This means that a loss would be **recorded** (debit) and a **liability** established (credit) in advance of the settlement.

Let's take one more example in which a contingent liability is not recorded, but a reduction of an asset occurs due to an expropriation. An **expropriation** occurs when a government claims privately owned property against the wishes of its owners.

Example 12.14 Loss Contingency—Expropriation

FACTS The government has decided to expropriate one of Macklin Manufacturing's plants to build a new airport. The book value of Macklin's asset is $20,000,000, and the company determines the following.

1. It is probable that it will receive $12,000,000 in compensation.
2. The expropriation is imminent.

QUESTION What is the entry, if any, to record a contingency for this expropriation?

SOLUTION

To record the contingent loss:

Loss on Plant Assets	8,000,000	
Plant Assets ($20,000,000 − $12,000,000)		8,000,000

Macklin should accrue the estimated loss with a debit to a loss account which decreases income. However, if the estimate of the loss is uncertain and involves a range of values, then the best estimate within the range should be used. If no amount within the range is a better estimate, the minimum amount within the range should be used.[5]

Accountants express concern over the diversity that now exists in the interpretation of "probable," "reasonably possible," and "remote." Current practice relies heavily on the exact language used in responses received from lawyers (such language is necessarily biased and protective rather than predictive). As a result, accruals and disclosures of contingencies vary considerably in practice. Some of the more common loss contingencies are:

- Litigation, claims, and assessments.
- Guarantee and warranty costs.
- Consideration payable (e.g., premiums and coupons).

Illustration 12.7 provides examples of contingencies as reported in companies' financial statements.

ILLUSTRATION 12.7 Risks Disclosed by Companies

Tesla, Inc.	We may become subject to product liability claims, which could harm our financial condition and liquidity if we are not able to successfully defend or insure against such claims.
Activision Blizzard, Inc.	We may be involved in legal proceedings that have a negative impact on our business. We may be subject to intellectual property claims.
The Walt Disney Company	The success of our businesses is highly dependent on the existence and maintenance of intellectual property rights in the entertainment products and services we create.
General Mills, Inc.	Global health developments and economic uncertainty resulting from the COVID-19 pandemic could materially and adversely affect our business, financial condition, and results of operations.

Companies do not record or report in the notes to the financial statements general risk contingencies inherent in business operations (e.g., the possibility of war, strike, uninsurable catastrophes, or a business recession) (see Underlying Concepts).

Underlying Concepts

In accordance with the full disclosure principle, companies provide supplementary information in addition to their financial statements and footnotes that is significant enough to influence the judgement of an informed user.

[5] When no amount within the range is a better estimate than any other amount, the company accrues the dollar amount at the low end of the range and discloses the dollar amount at the high end of the range. Unfortunately, in many cases, zero may arguably be the low point of the range, resulting in no liability being recognized. [5], [6]

Litigation, Claims, and Assessments

Companies must consider the following three factors, among others, in determining whether to record a liability with respect to **pending or threatened litigation** and actual or possible **claims** and **assessments**.

1. The **time period** in which the underlying cause of action occurred.
2. The **probability** of an unfavorable outcome.
3. The ability to make a **reasonable estimate** of the amount of loss.

To report a loss and a liability in the financial statements, **the cause for litigation must have occurred on or before the date of the financial statements**. Sometimes, the company becomes aware of the existence or possibility of a lawsuit or claim **after** the date of the financial statements but **before** they are issued. As long as the cause for litigation or claim occurred on or **before the date of the financial statements**, the company has to account for it. To evaluate the probability of an unfavorable outcome, a company considers the following.

- The nature of the litigation.
- The progress of the case.
- The opinion of legal counsel.
- Its own and others' experience in similar cases.
- Any management response to the lawsuit.

Example 12.15
Loss Contingency—Lawsuit

FACTS Assume that an employee filed a $1,000,000 lawsuit on November 30, 2025, against **Kroger Supermarkets** for damages suffered when the employee slipped and suffered a serious injury at one of the company's facilities. Kroger's lawyers believe that the company will not lose the lawsuit, putting the probability of future payments at less than 50%.

QUESTION Should Kroger recognize a liability for legal claims at December 31, 2025?

SOLUTION

Although a past obligating event has occurred (the injury leading to the filing of the lawsuit), **it is not probable** that Kroger will have to pay any damages. Kroger therefore does not need to record a liability (an accrual). If, on the other hand, Kroger's lawyer determined that it is probable that the company will lose the lawsuit, and a reasonable amount can be estimated, then Kroger should accrue the liability at December 31, 2025.

Companies can seldom predict the outcome of pending litigation with any assurance. And, even if evidence available at the balance sheet date does not favor the company, it is hardly reasonable to expect the company to publish in its financial statements a dollar estimate of the probable negative outcome. Such specific disclosures might weaken the company's position in the dispute and encourage the plaintiff to intensify its efforts.

With respect to **unfiled suits** and **unasserted claims and assessments**, a company must determine:

- The degree of **probability** that a suit may be filed or a claim or assessment may be asserted.
- The **probability** of an unfavorable outcome.

For example, assume that the **Federal Trade Commission** investigates Nawtee Company for restraint of trade and institutes enforcement proceedings. Private claims of treble (triple) damages for compensation often follow such proceedings. In this case, Nawtee must determine the probability of the claims being asserted **and** the probability of triple damages being awarded.

If both are probable, if the loss is reasonably estimable, and if the cause for action is dated on or before the date of the financial statements, then Nawtee should accrue the liability.[6]

Warranty Costs

A **warranty (product guarantee)** is a promise made by a seller to a buyer to make good on a deficiency of quantity, quality, or performance in a product. Manufacturers commonly use it as a sales promotion technique. Automakers, for instance, "hyped" their sales by extending their new-car warranty to seven years or 100,000 miles. For a specified period of time following the date of sale to the consumer, the manufacturer may promise to bear all or part of the cost of replacing defective parts, to perform any necessary repairs or servicing without charge, to refund the purchase price, or even to "double your money back."

Warranties and guarantees entail future costs. These additional costs, sometimes called "after costs" or "post-sale costs," are frequently significant.

- Although the future cost is indefinite as to amount, due date, and even customer, the company has a performance obligation for which a liability should be recognized.
- The estimated amount of the liability includes all the costs the company will incur related to the correction of defects or deficiencies required under the warranty provisions.

As indicated in Chapter 3, warranty costs are a classic example of a loss contingency. Companies often provide one of two types of warranties to customers:

1. Warranty that the product meets agreed-upon specifications in the contract at the time the product is sold. This type of warranty is included in the sales price of a company's product and is often referred to as an **assurance-type warranty**.
2. Warranty that provides an additional service beyond the assurance-type warranty. This warranty is not included in the sales price of the product and is referred to as a **service-type warranty**. As a result, it is recorded as a separate performance obligation.

Assurance-Type Warranty Companies do not record a separate performance obligation for assurance-type warranties. This type of warranty is nothing more than a quality guarantee that the good or service is free from defects at the point of sale. These types of obligations should be expensed in the period the goods are provided or services performed. In addition, the company should record a warranty liability. The estimated amount of the liability includes all the costs that the company will incur in the future due to the correction of defects or deficiencies required under the warranty provisions.

Example 12.16
Assurance-Type Warranty

FACTS Candy Machinery Company begins production of a new vending machine in July 2025 and sells 100 of these machines for $5,000 cash by year-end for a total sales revenue of $500,000 (100 × $5,000). Each vending machine is under warranty for one year. Candy Machinery estimates, based on past experience with similar machines, that the warranty cost will average $200 per unit for a total expected warranty expense of $20,000 (100 × $200). Further, as a result of parts replacements and services performed in compliance with machinery warranties, it incurs $4,000 in warranty costs in 2025 and $16,000 in 2026 related to the 2025 sales.

QUESTION What are the entries for the sale and the related warranty costs for 2025 and 2026?

[6]Companies need not disclose contingencies involving an unasserted claim or assessment when no claimant has come forward unless (1) it is considered probable that a claim will be asserted, and (2) there is a reasonable possibility that the outcome will be unfavorable. The FASB recently had a project to develop disclosures that are sufficient to enable users of financial statements to assess the likelihood, timing, and amount of future cash flows associated with loss contingencies. This project and its proposed recommendations were extremely controversial. Although the SEC continues to focus on these disclosures, the FASB has now removed the project from its active agenda.

SOLUTION

To recognize sales of vending machines:

July–December 2025

Cash	500,000	
Sales Revenue ($5,000 × 100)		500,000

To record payment for warranty costs incurred in 2025:

July–December 2025

Warranty Expense	4,000	
Cash, Inventory, Accrued Payroll		4,000

The adjusting entry to record estimated warranty expense and warranty liability for expected warranty claims is as follows.

December 31, 2025

Warranty Expense	16,000	
Warranty Liability ($20,000 − $4,000)		16,000

As a consequence of this adjusting entry at December 31, 2025, the balance sheet reports a warranty liability (current) of $16,000 ($20,000 – $4,000). The income statement for 2025 reports sales revenue of $500,000 and warranty expense of $20,000.

To record payment for warranty costs incurred in 2026 related to 2025 vending machine sales:

January 1–December 31, 2026

Warranty Liability	16,000	
Cash, Inventory, Accrued Payroll		16,000

At the end of 2026, no warranty liability is reported for the machinery sold in 2025.

Warranty Expense

During 2025 4,000	
12/31/25 16,000	
12/31/25 Bal. 20,000	

100 machines × $200 estimated warranty per machine = $20,000 total warranty expense

Service-Type Warranty A warranty is sometimes sold separately from the product. For example, when you purchase a TV, you are entitled to an assurance-type warranty. You also will undoubtedly be offered an extended warranty on the product at an additional cost, referred to as a service-type warranty. In most cases, service-type warranties provide the customer a service beyond fixing defects that existed at the time of sale.

Companies record a service-type warranty as a separate performance obligation. For example, in the case of the TV, the seller recognizes the sale of the TV with the assurance-type warranty separately from the sale of the service-type warranty.

- The sale of the service-type warranty is usually recorded in an Unearned Warranty Revenue account.
- Companies then recognize revenue on a straight-line basis over the period the service-type warranty is in effect.

Companies only defer and amortize costs that vary with and are directly related to the sale of the contracts (mainly commissions). Companies expense employees' salaries and wages, advertising, and general and administrative expenses because these costs occur even if the company did not sell the service-type warranty.

Example 12.17
Warranties

FACTS You purchase a car from Hamlin Auto for $30,000 on January 2, 2025. Hamlin estimates the assurance-type warranty costs on the car to be $700 (Hamlin will pay for repairs for the first 36,000 miles or 3 years, whichever comes first). You also purchase for $900 a service-type warranty for an additional 3 years or 36,000 miles. Hamlin incurs warranty costs related to the assurance-type warranty of $500 in 2025 and expects costs of $100 in 2026 and 2027. Hamlin records revenue on the service-type warranty on a straight-line basis.

QUESTION What are the necessary entries for Hamlin in 2025 and 2028?

SOLUTION

To record the sale of the car and related warranties:

January 2, 2025

Cash ($30,000 + $900)	30,900	
Unearned Warranty Revenue		900
Sales Revenue		30,000

To record warranty costs incurred in 2025:

January 2–December 31, 2025

Warranty Expense	500	
Cash, Inventory, Accrued Payroll		500

The adjusting entry to record estimated warranty expense and warranty liability for expected assurance warranty claims is as follows.

December 31, 2025

Warranty Expense	200	
Warranty Liability		200

As a consequence of this adjusting entry at December 31, 2025, the balance sheet reports a warranty liability of $200 for the assurance-type warranty costs in 2026 and 2025. The income statement for 2025 reports sales revenue of $30,000 and warranty expense of $700.

To record revenue recognized in 2028 on the service-type warranty:

January 1–December 31, 2028

Unearned Warranty Revenue ($900 ÷ 3)	300	
Warranty Revenue		300

Warranty costs under the service-type warranty will be expensed as incurred in 2028–2030.

Consideration Payable

Companies often make payments (provide consideration) to their customers as part of a revenue arrangement. Consideration paid or payable may indicate discounts, volume rebates, free products, or services. For example, numerous companies offer premiums (either on a limited or continuing basis) to customers in return for box tops, certificates, coupons, labels, or wrappers. The **premium** may be silverware, dishes, a small appliance, a toy, or free transportation.

Printed coupons that can be redeemed for a cash discount on items purchased are also extremely popular. Another popular marketing innovation is the **cash rebate**, which the buyer can obtain by returning the store receipt, a rebate coupon, and Universal Product Code (UPC label) or "bar code" to the manufacturer.

Companies offer premiums, coupon offers, and rebates to stimulate sales. And to the extent that the premiums reflect a material right promised to the customer, a performance obligation exists and should be recorded as a liability (see **Underlying Concepts**). However, the period that benefits is not necessarily the period in which the company pays the premium.

- At the end of the accounting period, many premium offers may be outstanding and must be redeemed when presented in subsequent periods.

Underlying Concepts

Do you remember the principles for expense and revenue recognition? The **expense recognition principle** requires that companies report the related expense in the period in which the expense is incurred. According to the **revenue recognition principle**, revenue is recorded in the period in which the performance obligation is satisfied.

- To reflect the existing current liability, the company estimates the number of outstanding premium offers that customers will present for redemption.
- The company then charges the cost of premium offers to Premium Expense. It credits the outstanding obligations to an account titled Premium Liability. [7]

Example 12.18
Consideration Payable

FACTS Fluffy Cake Mix Company sells boxes of cake mix for $3 per box. In addition, Fluffy Cake Mix offers its customers a large durable mixing bowl in exchange for $1 and 10 box tops. The mixing bowl costs Fluffy Cake Mix $2, and the company estimates that customers will redeem 60% of the box tops. The premium offer began in June 2025. During 2025, Fluffy Cake Mix purchased 20,000 mixing bowls at $2, sold 300,000 boxes of cake mix for $3 per box, and redeemed 60,000 box tops.

QUESTION What entries should Fluffy Cake Mix record in 2025?

SOLUTION

To record purchase of 20,000 mixing bowls at $2 per bowl in 2025:

Premium Inventory (20,000 mixing bowls × $2)	40,000	
Cash		40,000

To record the sale of the cake mix boxes in 2025:

Cash (300,000 boxes of cake mix × $3)	900,000	
Sales Revenue		900,000

To record the actual redemption of 60,000 box tops, the receipt of $1 per 10 box tops, and the delivery of the mixing bowls:

Cash [(60,000 ÷ 10) × $1]	6,000	
Premium Expense ($12,000 − $6,000)	6,000	
Premium Inventory [(60,000 ÷ 10) × $2]		12,000

The adjusting entry to record additional premium expense and the estimated premium liability at December 31, 2025, is as follows.

Premium Expense	12,000	
Premium Liability		12,000*

*Computation of Premium Liability at 12/31/25:

Total box tops sold in 2025	300,000
Estimated redemptions (in percent)	× .60
Total estimated redemptions	180,000
Cost of estimated redemptions [(180,000 box tops ÷ 10) × ($2 − $1)]	$18,000
Redemptions to date	(6,000)
Liability at 12/31/25	$12,000

The December 31, 2025, balance sheet of Fluffy Cake Mix reports Premium Inventory of $28,000 ($40,000 − $12,000) as a current asset and Premium Liability of $12,000 ($18,000 − $6,000) as a current liability. The 2025 income statement reports $18,000 premium expense as a selling expense.

Gain Contingencies

Gain contingencies are claims or rights to receive assets (or have a liability reduced) whose existence is uncertain but which may become valid eventually. The typical gain contingencies are:

- Possible receipts of monies from gifts, donations, and asset sales.
- Possible refunds from the government in tax disputes.
- Pending court cases with a probable favorable outcome.

Companies follow a conservative policy in this area; **they do not record gain contingencies.**[8]

Example 12.19
Gain Contingency

FACTS High-Tech is a plaintiff in a class action lawsuit against a drug manufacturer. The lawsuit is finally settled in High-Tech's favor, and the settlement amount is put in escrow to be divided among various plaintiffs and their attorneys. Presently, there is no agreement as to how to allocate the money among the plaintiffs

QUESTION Should High-Tech record a gain for this contingency?

SOLUTION

High-Tech has a gain contingency because the amount of cash is to be received is not yet known. However, any possible gain related to the lawsuit **should not be recorded** in the financial statements because the company should not recognize revenue before its realization. However, if the settlement amount to be paid to High-Tech is known and the settlement funds will be a paid out shortly, High-Tech should record a receivable for the amount to be received and a gain reported in the financial statements.

There are two items you should know regarding disclosure of gain contingencies:

1. A company discloses gain contingencies in the notes only when a high probability exists for realizing them.
2. It is unusual to find information about contingent gains in the financial statements and the accompanying notes.

Illustration 12.8 presents an example of a gain contingency disclosure.

BMC Industries, Inc.

Note 13: Legal Matters

In the first quarter, a U.S. District Court in Miami, Florida, awarded the Company a $5.1 million judgment against Barth Industries (Barth) of Cleveland, Ohio and its parent, Nesco Holdings, Inc. (Nesco). The judgment relates to an agreement under which Barth and Nesco were to help automate the plastic lens production plant in Fort Lauderdale, Florida. **The Company has not recorded any income relating to this judgment because Barth and Nesco have filed an appeal.**

ILLUSTRATION 12.8 Disclosure of Gain Contingency

Put It into Practice LO 12.3
Account for Contingencies

FACTS Preferred Travel has the following transactions that may or may not require recognition of contingencies.

1. During the year, Preferred Travel sold high-end travel accessories to customers who purchased its vacation packages. Preferred Travel offers a 2-year assurance warranty for these accessories. The company sold the items for $400,000 and estimates that warranty costs will be 5% of the amount sold. During the current year, it spent $8,000 in servicing warranty claims.
2. Preferred Travel also sold specific vacation packages related to fishing expeditions. The company sold 3,000 of these vacation packages at a cost of $500 per package. When the customer purchases one of these vacation packages, the customer also receives a coupon giving customer the right to a child's tackle box which has a value of $10. The customer must also remit $1 with the coupon to receive the tackle box. During the year, customers returned 800 coupons. It is estimated that 60% of customers will send in their coupon. The tackle box cost Preferred Travel $4; during the year, 2,500 tackle boxes were purchased by Preferred Travel for possible disbursement.

3. As a result of uninsured accidents during the year, personal injury suits for $350,000 and $60,000 have been filed against the company. It is the judgment of legal counsel that an unfavorable outcome is unlikely in the $60,000 case but that an unfavorable verdict approximating $250,000 (reliably estimated) will probably result in the $350,000 case.
4. Preferred Travel is involved with one of its suppliers who failed to provide proper safeguards for its customers during a recent trip. As a result, a substantial number of its customers decided to return home in the middle of the trip and demanded refunds which amounted to $200,000. Preferred Travel paid the $200,000 but has now sued the supplier. The attorney for Preferred Travel believes that Preferred Travel will win the lawsuit indicating that the company's chances are at least 70%.

INSTRUCTIONS Prepare all the entries necessary to record the above transactions as they occurred and any adjusting journal entries relative to the transactions. For simplicity, assume that adjusting entries are recorded only once a year on December 31. If no entry is required, indicate what should be reported relative to each situation in the financial statements and accompanying notes.

SOLUTION

1. To record sales of accessories:

Cash	400,000	
Sales Revenue		400,000

To record payment for warranty costs incurred during period:

Warranty Expense	8,000	
Cash, Inventory, Accrued Payroll		8,000

To record adjusting entry to record estimated warranty expense and estimated warranty liability claims:

Warranty Expense	12,000	
Warranty Liability [(.05 × $400,000) − $8,000]		12,000

2. To record the sale of vacation packages:

Cash	1,500,000	
Sales Revenue ($500 × 3,000)		1,500,000

To record purchase of premiums:

Premium Inventory	10,000	
Cash ($4 × 2,500)		10,000

To record premiums redeemed and cash received during year:

Cash ($1 × 800)	800	
Premium Expense ($3,200 − $800)	2,400	
Premium Inventory ($4 × 800)		3,200

To record a liability for premiums at year-end:

Premium Expense	3,000	
Premium Liability [($4 − $1) × 1,000]		3,000

Computation of Premium Expense and Premium Liability at year-end:

Total vacation packages sold	3,000	
Estimated redemptions	× .60	
Total estimated redemptions	1,800	
Cost of estimated redemptions [1,800 × ($4 − $1)]		$5,400
Redemptions to date		2,400
Liability		$3,000

3. **To record liability loss:**

Lawsuit Loss	250,000	
Lawsuit Liability		250,000

A loss and a liability have been recorded for $250,000 because (1) information is available prior to the issuance of the financial statements that indicates it is probable that a liability had been incurred at the date of the financial statements, and (2) the amount is reasonably estimable. That is, the occurrence of the uninsured accidents during the year plus the outstanding injury suits and the attorney's estimate of probable loss required recognition of a loss contingency. The $60,000 legal case should not be recorded, as the loss is unlikely to occur.

4. No entry required. While Preferred Travel has a gain contingency because the amount of cash to be received is not yet known, any possible gain related to the lawsuit **should not be recorded** in the financial statements. This is because the company should not recognize revenue on a gain contingency until realized. This contingency should be disclosed in the notes to the financial statements. Therefore, Preferred Travel should disclose that it is involved in a lawsuit and that the outcome is expected to be favorable.

12.4 Presentation and Decision Analysis

LEARNING OBJECTIVE 4

Indicate how to present and analyze liabilities and contingencies.

Presentation of Current Liabilities

Warren Buffett once made the following observation: "only when the tide goes out do you discover who's been swimming naked." His statement is certainly correct today as the Covid-19 pandemic has caused well-known companies like **Hertz**, **Nieman Marcus**, **Pier One**, and **JC Penney** to declare bankruptcy. These companies declared bankruptcy because they did not have the liquidity and financial flexibility necessary to survive a significant downturn in the economy. As you analyze financial statements, you should understand that current liabilities:

- Are usually reported in financial statements at their full maturity value.
- May be listed in the financial statements in order of maturity, in order of amount, or in order of liquidation preference.
- Are usually presented as the first classification in the liabilities and stockholders' equity section of the balance sheet.

Illustration 12.9 presents an excerpt of **Best Buy Co.**'s financial statements that is representative of the reports of most companies.

ILLUSTRATION 12.9 Best Buy
Current Liabilities

Best Buy
(dollars in millions)

	Feb. 1, 2020
Current assets (including Cash, $2,249; Accounts receivable, $1,149; and Short term investments, $118)	$8,857
Current liabilities	
Accounts payable	$5,288
Unredeemed gift card liabilities	281
Deferred revenue	501
Accrued compensation and related expenses	410
Accrued liabilities	906
Current portion of operating lease liabilities	660
Current portion of long term debt	14
Total current liabilities	$8,060

Additional Presentation and Disclosure

The notes to the financial statements also are useful for helping to understand a company's liquidity and financial flexibility. The following note disclosures are common.

- Companies should identify **secured liabilities**, indicating the assets pledged as security.
- **Current maturities of long-term debt** should be classified as current liabilities. **Best Buy**, for example, reports the current portion of long-term debt of $14 million in its current liability section (Illustration 12.9). Companies exclude long-term debts maturing currently from current liabilities if they are to be either:
  1. Retired by assets accumulated for this purpose that properly have not been shown as current assets.
  2. Refinanced, or retired from the proceeds of a new debt issue.
  3. Converted into capital stock.

In these situations, the use of current assets or the creation of other current liabilities does not occur. Therefore, classification as a current liability is inappropriate.

A company should disclose the plan for liquidation of such a debt either parenthetically or by a note to the financial statements. When only a part of a long-term debt is to be paid within the next 12 months, as in the case of serial bonds that it retires through a series of annual installments, **the company reports the maturing portion of long-term debt as a current liability** and the remaining portion as a long-term debt. An exception to this reporting is when a company will pay a current maturing obligation from assets classified as long-term.

Finally, undoubtedly some of you have taken out loans to pay for your education. If your loans are due on demand (referred to as a callable loan), you would probably consider it a current liability. If you did, your interpretation would be correct. Similarly, a company should classify as current any liability that is **due on demand** (callable by the creditor) or will be due on demand within a year (or operating cycle, if longer).

Liabilities often become callable by the creditor when there is a violation of the debt agreement. For example, most debt agreements specify a given level of equity to debt be maintained, or specify that working capital must be of a minimum amount. If the company violates an agreement, it must classify the debt as current because it is a reasonable expectation that existing working capital will be used to satisfy the debt. Only if a company can show that it is **probable** that it will cure (satisfy) the violation within the grace period specified in the agreements can it classify the debt as noncurrent. [9]

Short-Term Obligations Expected to Be Refinanced

Short-term obligations are debts scheduled to mature within one year after the date of a company's balance sheet or within its operating cycle, whichever is longer.

- Some short-term obligations are expected to be refinanced on a long-term basis.
- These short-term obligations will not require the use of working capital during the next year (or operating cycle, if longer).[7]

At one time, the accounting profession generally supported the exclusion of short-term obligations from current liabilities if they were "expected to be refinanced." But the profession provided no specific guidelines, so companies determined whether a short-term obligation was "expected to be refinanced" based solely on management's **intent** to refinance on a long-term basis. Classifications were not clear-cut. For example, a company might obtain a five-year bank loan but handle the actual financing with 90-day notes, which it must keep turning over (renewing). In this case, is the loan a long-term debt or a current liability?

Refinancing Criteria The accounting profession has developed criteria for determining the circumstances under which short-term obligations may be properly excluded from current liabilities. **Both** of the following conditions must be met.

1. The company must **intend to refinance** the obligation on a long-term basis.
2. The company must **demonstrate an ability** to consummate the refinancing. **[10]**

Intention to refinance on a long-term basis means that the company intends to refinance the short-term obligation so that it will not require the use of working capital during the next fiscal year (or operating cycle, if longer). The company demonstrates the **ability** to consummate the financing either by:

a. **Actually refinancing** the short-term obligation by issuing a long-term obligation or equity securities after the date of the balance sheet but before it is issued.

b. Entering into a **financing agreement** that clearly permits the company to refinance the debt on a long-term basis on terms that are readily determinable.

If an actual refinancing occurs, the portion of the short-term obligation to be excluded from current liabilities may not exceed the proceeds from the new obligation or equity securities used to retire the short-term obligation.

For example, **Montavon Winery** had $3,000,000 of short-term debt. Subsequent to the balance sheet date but before issuing the balance sheet, the company issued 100,000 shares of common stock, intending to use the proceeds to liquidate the short-term debt at its maturity. If Montavon's net proceeds from the sale of the 100,000 shares total $2,000,000, it can exclude from current liabilities only $2,000,000 of the short-term debt.

An additional question is whether a company should exclude from current liabilities a short-term obligation if it is paid off after the balance sheet date and replaced by long-term debt before the balance sheet is issued.

Example 12.20
Classification of Debt

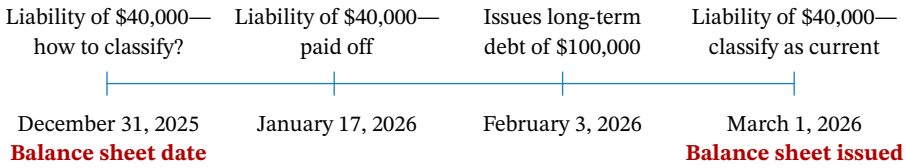
FACTS Marquart Company pays off debt of $40,000 on January 17, 2026. On February 17, 2026, Marquart issues long-term debt of $100,000. Marquart's financial statements, dated December 31, 2025, are to be issued March 1, 2026.

QUESTION Should Marquart exclude the $40,000 short-term debt from current liabilities in its 2025 balance sheet?

[7] **Refinancing a short-term obligation on a long-term basis** means either replacing it with a long-term obligation or equity securities, or renewing, extending, or replacing it with short-term obligations for an uninterrupted period extending beyond one year (or the operating cycle, if longer) from the date of the company's balance sheet.

SOLUTION

Marquart should not exclude this debt from current liabilities. Here's why: Repayment of the short-term obligation required the use of **existing** current assets **before** the company obtained funds through long-term financing, as shown in the following timeline.



Therefore, unlike the Montavon refinancing through the issuance of stock, Marquart has neither an actual refinancing nor a refinancing agreement in place to pay the debt on a long-term basis. As a result, Marquart must include the short-term obligations in current liabilities at the balance sheet date.

Analysis of Current Liabilities

The distinction between current liabilities and long-term debt is important. It provides information about the liquidity of the company. Liquidity regarding a liability is the expected time to elapse before its payment. In other words, a liability soon to be paid is a current liability.

- A liquid company is better able to withstand a financial downturn.
- Also, it has a better chance of taking advantage of investment opportunities that develop.

Analysts use certain basic ratios such as net cash flow provided by operating activities to current liabilities, and the turnover ratios for receivables and inventory, to assess liquidity. Two other ratios used to examine liquidity are the current ratio and the acid-test ratio.

Current Ratio

The **current ratio** is the ratio of total current assets to total current liabilities, as follows.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

What are the most common types of current assets that would be in the numerator? Cash, short-term investments, accounts receivable, inventory, and perhaps prepaid expenses. The ratio shows how many times the current assets can cover, or be used to extinguish, the current liabilities. Clearly, the company wants the numerator to be more than the denominator. Sometimes it is called the **working capital ratio** because working capital is the excess of current assets over current liabilities.

The current ratio does not reflect that some of the current assets in the numerator may be hard to convert to cash to pay current liabilities. The best example is inventory.

- With inventories, especially raw materials and work in process, there is a question of how long it will take to transform them into the finished product and what ultimately will be realized in the sale of the merchandise.
- Eliminating the inventories, along with any prepaid expenses, from the amount of current assets might provide better information for short-term creditors.

Therefore, some analysts use the acid-test ratio in place of the current ratio.

Acid-Test Ratio

Many analysts favor an **acid-test** or **quick ratio** that relates total current liabilities to cash, short-term investments, and receivables, as follows.

$$\text{Acid-Test Ratio} = \frac{\text{Cash} + \text{Short-Term Investments} + \text{Accounts Receivable (net)}}{\text{Current Liabilities}}$$

As you can see, the acid-test ratio does not include inventories or prepaid expenses.

To illustrate the computation of these two ratios, we use the information for **Best Buy** from Illustration 12.9. **Illustration 12.10** shows the computation of the current and acid-test ratios for Best Buy.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$8{,}857}{\$8{,}060} = 1.10 \text{ times}$$

$$\text{Acid-Test Ratio} = \frac{\text{Cash} + \text{Short-Term Investments} + \text{Accounts Receivable (Net)}}{\text{Current Liabilities}} = \frac{\$3{,}516}{\$8{,}060} = 0.44 \text{ times}$$

ILLUSTRATION 12.10
Computation of Current and Acid-Test Ratios for **Best Buy**

From this information, it appears that Best Buy's current position is adequate.

Here are additional important points to consider when analyzing **Best Buy**'s current liabilities.

- **Unearned (deferred) revenue.** Best Buy has some deferred revenue. Deferred revenue amounts increase current liabilities and decrease both the current ratio and acid test ratio, but there is a silver lining here as deferred revenue will increase revenue in the future. Take **Microsoft** as an example. Microsoft had a current liability entitled short-term unearned revenue of over $435 billion recently. Is that good or bad? It increases current liabilities but at the same time it indicates that Microsoft will have increasing operating revenue in the future.
- **Interest rate environment.** It is also important to understand the interest rate environment related to current liabilities. **General Electric Capital** at one time used considerable short-term debt to refinance its debt. Interest rates were low, but analysts expressed concern that perhaps GE should use more long-term debt and make sure that it locked in low rates for a much longer period. That situation is particularly appropriate today as Covid-19 concerns have driven down long-term rates.
- **Working capital position** Best Buy has an adequate current ratio (greater than 1), but it may be missing some opportunities related to additional growth. For example, **Walmart** at one time adopted a policy of extending its payment to vendors which increased accounts payable substantially. Although its current ratio decreased as a result, the excess cash was used for various profitable projects which increased its income.

Accounting Matters — I'll Pay You Later

If you compared the liquidity for **Best Buy** and **Walmart**, Best Buy appears to be the more liquid company. However, a closer look at the elements of working capital may suggest a different story. This is because Walmart and other retailers like **Tesco** could be using a strategy adopted recently to extend the period of time for paying their vendors.

By pushing out payments to suppliers to three and four months, companies can pursue any number of other projects. For example, **Mondelez** is buying back stock. **Kellogg's** is in the middle of a restructuring. **Procter & Gamble**'s recent move to extend its payment terms to 75 days added about $1 billion to its cash flow. These strategies result in higher current

liabilities and lower liquidity ratios. So while Walmart looks less liquid, its strategy may pay off in the form of lower overall financing costs.

Suppliers, however, may not share the same enthusiasm for extended payment terms. Receiving payments later is often crippling for suppliers, especially smaller businesses that have little cushion. In Britain, the Marketing Agencies Association called on its member advertising agencies to "strike" in April against **Anheuser-Busch InBev** after the company began seeking new terms. Those included acceptance of a payment period longer than 120 days and a request for pro bono work. On the other hand, offsetting these costs for suppliers in arrangements with powerful retailers are longer-term contracts and more consistency in order volumes.

Desperate times call for desperate measures? During the global pandemic when retailers could barely keep items on the shelf, they needed their suppliers to be financially healthy. As a result, a number of retailers made changes to their supply-chain financing program to allow qualified suppliers to get payments earlier in hopes of keeping the suppliers afloat, and the supply chain intact.

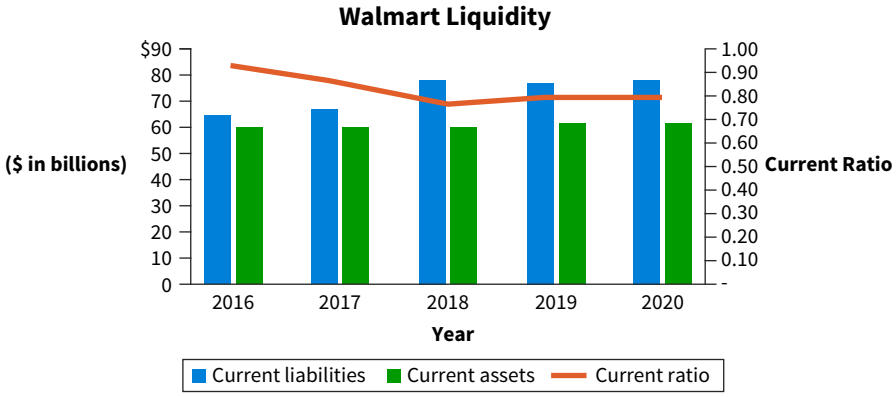
Either way, according to one accounting analyst, "the additional financing costs that suppliers incur because they aren't being paid promptly work their way back into higher prices for consumers." In addition, this makes it difficult for investors to compare companies, if some are able to squeeze suppliers and others do not. Those with power in the supply chain, like Walmart, may appear less liquid. So to make valid comparisons of liquidity ratios, you need to know something about the company's supply chain strategy.

Sources: S. Strom, "Big Companies Pay Later, Squeezing Their Suppliers," *The New York Times* (April 7, 2015); and A. Ram, "Tesco Probe Raises Concerns that Retailers Dominate Supply Chain Balance of Power Still Favours Large Supermarkets at Expense of Suppliers," *Financial Times* (January 31, 2016).

Analytics in Action: Current Ratio Analysis Can Lead to Innovation

As you know, the current ratio offers a glimpse into a company's ability to meet its current obligations. A current ratio greater than one is often desired as it means a company has sufficient current assets on hand to liquidate current liabilities. So, what does it mean when a company's current ratio is less than one? What is typically a red flag might actually be a sign of innovative business practices.

Take **Walmart** as an example. As the graph shows, Walmart's current ratio has consistently been lower than one. How does the company make this work? With a lot of data! That is, companies like Walmart are able to pull granular data out of their accounting systems and, using sophisticated software tools, analyze that data to make business decisions. In Walmart's situation, it revised its supplier agreements to more closely align payment terms with the supplier's average total days of on-hand inventory. Tailoring the timing of payments to suppliers may therefore result in a current ratio of less than one, but it is a creative way to effectively manage working capital.



Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Review and Practice

Key Terms Review

accounts payable (trade accounts payable) 12-3
accumulated rights 12-10
acid-test (quick) ratio 12-33
assurance-type warranty 12-23
bonus 12-12
breakage 12-16
compensated absences 12-10
contingency 12-19
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current maturities of long-term debt 12-30
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Social Security tax 12-8
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unearned (deferred) revenues 12-14
vested rights 12-10
warranty 12-23
working capital ratio 12-32

Learning Objectives Review

1 Describe the nature, valuation, and reporting of current liabilities in the form of payables.

Current liabilities are **obligations whose liquidation a company reasonably expects to require the use of current assets or the creation of other current liabilities.** Theoretically, liabilities should be measured by the present value of the future outlay of cash required to liquidate them. In practice, companies usually record and report current liabilities at their full maturity value.

There are several **types of current liabilities**, such as (1) accounts payable, (2) notes payable, (3) taxes payable, and (4) employee-related liabilities. The employee-related liabilities are (1) payroll deductions, (2) compensated absences, and (3) bonus agreements.

2 Describe the nature, valuation, and reporting of current liabilities in the form of unearned revenues.

Unearned revenues arise when a company receives payment before delivering goods or rendering services. When a company receives an advance payment, it debits Cash and credits a current liability account identifying the source of the unearned revenue. The company recognizes revenue by debiting the unearned revenue account and crediting a revenue account. Common unearned revenues relate to tickets and subscriptions, gift cards, and customer advances and deposits.

3 Explain the accounting for loss and gain contingencies.

A company should accrue an estimated loss from a **loss contingency** by charging expense and recording a liability only if *both* of the following conditions are met: (1) information available prior to the issuance of the financial statements indicates that it is probable that a liability has been incurred at the date of the financial statements, and (2) the amount of the loss can be reasonably estimated. If the loss is either probable or estimable but not both, and if there is at least a reasonable possibility that a company may have incurred a liability, it should disclose in the notes both the nature of the contingency and an estimate of the possible loss.

The following factors must be considered in **determining whether to record a liability** with respect to pending or threatened litigation and actual or possible claims and assessments: (1) the time period in which the underlying cause for action occurred, (2) the probability of an unfavorable outcome, and (3) the ability to reasonably estimate the amount of loss.

If it is probable that customers will make claims under **warranties** relating to goods or services that have been sold and it can reasonably estimate the costs involved, the company uses the accrual method. It charges warranty costs under assurance-type warranties to operating expense in the year of sale.

Premiums, coupon offers, and rebates are made to stimulate sales. Companies should charge their costs to expense in the period of the sale that benefits from the premium plan.

Gain contingencies are not recorded. Instead, they are disclosed in the notes only when the probabilities are high that a gain contingency will occur.

4 Indicate how to present and analyze liabilities and contingencies.

The current liability accounts are usually presented as the first classification in the liabilities and stockholders' equity section of the balance sheet. Within the current liabilities section, companies may list the accounts in order of maturity, in descending order of amount, or in order of liquidation preference. Detail and supplemental information concerning current liabilities should be sufficient to meet the requirement of full disclosure.

Companies present in current liabilities the current maturities of long-term debt and callable debt due within one year. A short-term obligation is excluded from current liabilities if both the following

conditions are met: (1) the company must intend to refinance the obligation on a long-term basis, **and** (2) it must demonstrate an ability to consummate the refinancing.

Two ratios used to analyze liquidity are the **current and acid test ratios**.

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Exercises, Problems, Data Analytics Activities, Problem Solution Walkthrough Videos, and many more assessment tools and resources are available for practice in Wiley Course Resources.

Questions

1. Distinguish between a current liability and a long-term debt.
2. Assume that your friend Will Morris, who is a music major, asks you to define and discuss the nature of a liability. Assist him by preparing a definition of a liability and by explaining to him what you believe are the elements or factors inherent in the concept of a liability.
3. Why is the liabilities section of the balance sheet of primary significance to bankers?
4. How are current liabilities related by definition to current assets? How are current liabilities related to a company's operating cycle?
5. How is present value related to the concept of a liability?
6. What is the nature of a "discount" on notes payable?
7. What are compensated absences?
8. Under what conditions must an employer accrue a liability for the cost of compensated absences?
9. Under what conditions is an employer required to accrue a liability for sick pay? Under what conditions is an employer permitted, but not required, to accrue a liability for sick pay?
10. Faith Battle operates a health food store, and she has been the only employee. Her business is growing, and she is considering hiring some additional staff to help her in the store. Explain to her the various payroll deductions that she will have to account for, including their potential impact on her financial statements, if she hires additional staff.
11. How does unearned revenue arise? Why can it be classified properly as a current liability? Give several examples of business activities that result in unearned revenues.
12. What is a gift card? How does the accounting for a gift card reflect the application of the revenue recognition principle?
13. What is gift card breakage? Briefly describe the accounting for gift card breakage.
14. Leon Wight, a newly hired loan analyst, is examining the current liabilities of a corporate loan applicant. He observes that unearned revenues have declined in the current year compared to the prior year. Is this a positive indicator about the client's liquidity? Explain.
15. Define (a) a contingency and (b) a contingent liability.
16. Under what conditions should a contingent liability be recorded?
17. Distinguish between a determinable current liability and a contingent liability. Give two examples of each type.
18. How are the terms "probable," "reasonably possible," and "remote" related to contingent liabilities?
19. Grant Company has had a record-breaking year in terms of growth in sales and profitability. However, market research indicates that it will experience operating losses in two of its major businesses next year. The controller has proposed that the company record a provision for these future losses this year, since it can afford to take the charge and still show good results. Advise the controller on the appropriateness of this charge.
20. Explain the accounting for an assurance-type warranty.
21. Explain the accounting for a service-type warranty.
22. Southeast Airlines Inc. awards members of its Flightline program a second ticket at half price, valid for 2 years anywhere on its flight system, when a full-price ticket is purchased. How would you account for the full-fare and half-fare tickets?
23. Pacific Airlines Co. awards members of its Frequent Fliers Club one free round-trip ticket, anywhere on its flight system, for every 50,000 miles flown on its planes. How would you account for the free ticket award?
24. Should a liability be recorded for risk of loss due to lack of insurance coverage? Discuss.
25. What factors must be considered in determining whether or not to record a liability for pending litigation? For threatened litigation?
26. Within the current liabilities section, how do you believe the accounts should be listed? Defend your position.
27. How does the acid-test ratio differ from the current ratio? How are they similar?
28. When should liabilities for each of the following items be recorded on the books of an ordinary business corporation?
    a. Acquisition of goods by purchase on credit.
    b. Officers' salaries.
    c. Special bonus to employees.
    d. Dividends.
    e. Purchase commitments.
29. How should a debt callable by the creditor be reported in the debtor's financial statements?
30. Under what conditions should a short-term obligation be excluded from current liabilities?
31. What evidence is necessary to demonstrate the ability to consummate the refinancing of short-term debt?

Brief Exercises

BE12.1 (LO 1) Roley Corporation uses a periodic inventory system and the gross method of accounting for purchase discounts. On July 1, Roley purchased $60,000 of inventory, terms 2/10, n/30, FOB shipping point. Roley paid freight costs of $1,200. On July 3, Roley returned damaged goods and received credit of $6,000. On July 10, Roley paid for the goods. Prepare all necessary journal entries for Roley.

BE12.2 (LO 1) Upland Company borrowed $40,000 on November 1, 2025, by signing a $40,000, 9%, 3-month note. Prepare Upland's November 1, 2025, entry; the December 31, 2025, annual adjusting entry; and the February 1, 2026, entry.

BE12.3 (LO 1) Takemoto Corporation borrowed $60,000 on November 1, 2025, by signing a $61,350, 3-month, zero-interest-bearing note. Prepare Takemoto's November 1, 2025, entry; the December 31, 2025, annual adjusting entry; and the February 1, 2026, entry.

BE12.4 (LO 1) Dillons Corporation made credit sales of $30,000 which are subject to 6% sales tax. The corporation also made cash sales which totaled $20,670 including the 6% sales tax. (a) Prepare the entry to record Dillons' credit sales. (b) Prepare the entry to record Dillons' cash sales.

BE12.5 (LO 1) Lexington Corporation's weekly payroll of $24,000 included FICA taxes withheld of $1,836, federal taxes withheld of $2,990, state taxes withheld of $920, and insurance premiums withheld of $250. Prepare Lexington's journal entry to record the weekly payroll.

BE12.6 (LO 1) Kasten Inc. provides paid vacations to its employees. At December 31, 2025, 30 employees have each earned 2 weeks of vacation time. The employees' average salary is $500 per week. Prepare Kasten's December 31, 2025, adjusting entry.

BE12.7 (LO 1) Mayaguez Corporation provides its officers with bonuses based on net income. For 2025, the bonuses total $350,000 and are paid on February 15, 2026. Prepare Mayaguez's December 31, 2025, adjusting entry and the February 15, 2026, entry.

BE12.8 (LO 2) Sport Pro Magazine sold 12,000 annual subscriptions on August 1, 2025, for $18 each. Prepare Sport Pro's August 1, 2025, journal entry and the December 31, 2025, annual adjusting entry, assuming the magazines are published and delivered monthly.

BE12.9 (LO 2) Rio Grande Taco Palace sells 200 gift cards at $50 per gift card and 100 of the gift cards are redeemed by year-end. Prepare the journal entries. (Ignore Cost of Goods Sold and possible breakage.)

BE12.10 (LO 2) Refer to the facts BE12.9. Rio Grande estimates that it will have 10% breakage on its gift cards. Prepare the entry for the gift card redemption and the expected breakage for the gift cards in the current year. (Ignore Cost of Goods Sold.)

BE12.11 (LO 2) Brown University Student Housing Inc. requires all tenants to pay a $500 security deposit, which will be returned at the end of the lease, less any repair costs on the apartment. Brown rented 275 apartments in the current month. Prepare the entry to record the security deposits collected.

BE12.12 (LO 3) Scorcese Inc. is involved in a lawsuit at December 31, 2025. (a) Prepare the December 31 entry assuming it is probable that Scorcese will be liable for $900,000 as a result of this suit. (b) Prepare the December 31 entry, if any, assuming it is *not* probable that Scorcese will be liable for any payment as a result of this suit.

BE12.13 (LO 3) Buchanan Company recently was sued by a competitor for patent infringement. Attorneys have determined that it is probable that Buchanan will lose the case and that a reasonable estimate of damages to be paid by Buchanan is $300,000. In light of this case, Buchanan is considering establishing a $100,000 self-insurance allowance. What entry(ies), if any, should Buchanan record to recognize this loss contingency?

BE12.14 (LO 3) Streep Factory provides a 2-year warranty with one of its products which was first sold in 2025. Streep sold $1,000,000 of products subject to the warranty. Streep expects $125,000 of warranty costs over the next 2 years. In 2025, Streep spent $70,000 servicing warranty claims. Prepare Streep's journal entry to record the sales (ignore Cost of Goods Sold) and the December 31 adjusting entry, assuming the expenditures are inventory costs.

BE12.15 (LO 3) Leppard Corporation sells smart home systems. The corporation also offers its customers a 4-year warranty contract. During 2025, Leppard sold 20,000 warranty contracts at $99 each. The corporation spent $180,000 servicing warranties during 2025. Prepare Leppard's journal entries for (a) the sale of contracts, (b) the cost of servicing the warranties, and (c) the recognition of warranty revenue. Assume the service costs are inventory costs.

BE12.16 (LO 3) Wynn Company offers a set of building blocks to customers who send in 3 UPC codes from Wynn cereal, along with 50¢. The block sets cost Wynn $1.10 each to purchase and 60¢ each to mail to customers. During 2025, Wynn sold 1,200,000 boxes of cereal. The company expects 30% of the UPC codes to be sent in. During 2025, 120,000 UPC codes were redeemed. Prepare Wynn's December 31, 2025, adjusting entry.

BE12.17 (LO 4) At December 31, 2025, Burr Corporation owes $500,000 on a note payable due February 15, 2026. (a) If Burr had restructured the note on December 15, 2025, such that Burr has the contractual right to defer payment of $250,000 of the note until February 15, 2027, how much of the $500,000 should be reported as a current liability at December 31, 2025? (b) If Burr pays off the note on February 15, 2026, and then borrows $1,000,000 on a long-term basis on March 1, how much of the $500,000 should be reported as a current liability at December 31, 2025, the end of the fiscal year? Burr issues the balance sheet on March 1, 2026.

Exercises

E12.1 (LO 1) (Balance Sheet Classification of Various Liabilities) How would each of the following items be reported on the balance sheet?

a. Accrued vacation pay.
b. Estimated taxes payable.
c. Service warranties on appliance sales.
d. Customer advance on an order.
e. Employee payroll deductions unremitted.
f. Unpaid bonus to officers.
g. Deposit received from customer to guarantee performance of a contract.
h. Sales taxes payable.
i. Gift certificates sold to customers but not yet redeemed.
j. Premium offers outstanding.
k. Discount on notes payable.
l. Personal injury claim pending (probable but not estimable).
m. Current maturities of long-term debts to be paid from current assets.
n. Amounts received for gift cards.

E12.2 (LO 1) Excel **(Accounts and Notes Payable)** The following are selected 2025 transactions of Astin Corporation.

Sept. 1	Purchased inventory from Encino Company on account for $50,000. Astin records purchases gross and uses a periodic inventory system.
Oct. 1	Issued a $50,000, 12-month, 8% note to Encino in payment of account.
Oct. 1	Borrowed $50,000 from the Shore Bank by signing a 12-month, zero-interest-bearing $54,000 note.

Instructions

a. Prepare journal entries for the selected transactions above.
b. Prepare adjusting entries at December 31.
c. Compute the total net liability to be reported on the December 31 balance sheet for:
  1. The interest-bearing note.
  2. The zero-interest-bearing note.

E12.3 (LO 1) (Compensated Absences) Broderick Company began operations on January 2, 2025. It employs 9 individuals who work 8-hour days and are paid hourly. Each employee earns 10 paid vacation days and 6 paid sick days annually. Vacation days may be taken after January 15 of the year following the year in which they are earned. Sick days may be taken as soon as they are earned; unused sick days accumulate. Additional information is as follows.

Actual Hourly Wage Rate		Vacation Days Used by Each Employee		Sick Days Used by Each Employee	
2025	2026	2025	2026	2025	2026
$10	$11	0	9	4	5

Broderick Company has chosen to accrue the cost of compensated absences at rates of pay in effect during the period when earned and to accrue sick pay when earned.

Instructions

a. Prepare journal entries to record transactions related to compensated absences during 2025 and 2026.

b. Compute the amounts of any liability for compensated absences that should be reported on the balance sheet at December 31, 2025 and 2026.

E12.4 (LO 1) Excel (Compensated Absences) Assume the facts in E12.3 except that Broderick Company has chosen not to accrue paid sick leave until used, and has chosen to accrue vacation time at expected future rates of pay without discounting. The company used the following projected rates to accrue vacation time.

Year in Which Vacation Time Was Earned	Projected Future Pay Rates Used to Accrue Vacation Pay
2025	$10.75
2026	11.60

Instructions

a. Prepare journal entries to record transactions related to compensated absences during 2025 and 2026.

b. Compute the amounts of any liability for compensated absences that should be reported on the balance sheet at December 31, 2025 and 2026.

E12.5 (LO 1) (Adjusting Entry for Sales Tax) During the month of June, Rowling Boutique recorded cash sales of $233,200 and credit sales of $153,700, both of which include the 6% sales tax that must be remitted to the state by July 15.

Instructions

Prepare the adjusting entry that should be recorded to fairly present the June 30 financial statements.

E12.6 (LO 1) (Payroll Tax Entries) The payroll of YellowCard Company for September 2025 is as follows.

Total payroll was $480,000, of which $110,000 is exempt from Social Security tax because it represented amounts paid in excess of $142,800 to certain employees. The amount paid to employees in excess of $7,000 (the maximum for both federal and state unemployment taxes) was $400,000. Income taxes in the amount of $80,000 were withheld, as was $9,000 in union dues. The state unemployment tax is 3.5%, but YellowCard Company is allowed a credit of 2.3% by the state for its unemployment experience. Also, assume that the current FICA tax is 7.65% on an employee's wages to $142,800 and 1.45% in excess of $142,800. The federal unemployment tax rate is 0.8% after state credit.

Instructions

Prepare the necessary journal entries if the wages and salaries paid and the employer payroll taxes are recorded separately.

E12.7 (LO 1) (Payroll Tax Entries) Green Day Hardware's payroll for November is summarized below.

		Amount Subject to Payroll Taxes		
			Unemployment Tax	
Payroll	Wages Due	FICA	Federal	State
Factory	$120,000	$120,000	$40,000	$40,000
Sales	32,000	32,000	4,000	4,000
Administrative	36,000	36,000	—	—
Total	$188,000	$188,000	$44,000	$44,000

At this point in the year, some employees have already received wages in excess of those to which payroll taxes apply. Assume that the state unemployment tax is 2.5%. The FICA rate is 7.65% on an employee's wages to $142,800 and 1.45% in excess of $142,800. Of the $188,000 wages subject to FICA tax, $20,000 of the sales wages is in excess of $142,800. Federal unemployment tax rate is 0.8% after credits. Income tax withheld amounts to $16,000 for factory, $7,000 for sales, and $6,000 for administrative.

Instructions

a. Prepare a schedule showing the employer's total cost of wages for November by function. (Round all computations to nearest dollar.)

b. Prepare the journal entries to record the factory, sales, and administrative payrolls including the employer's payroll taxes.

E12.8 (LO 2) (Unearned Revenues) Caratini Company sells custom-made windows to Bryant Inc. for a new office building. The sale price for the windows is $275,000. Caratini requires customers to provide a down payment of 15% before it designs and manufactures the windows to customer specifications. Bryant makes the down payment on December 10, 2025, and the windows are completed and delivered on April 3, 2026.

Instructions

a. Prepare the entry for Caratini when it receives the down payment.

b. Prepare the entry (or entries) for Caratini on April 3, 2026. The cost of the windows is $200,000.

E12.9 (LO 2) (Unearned Revenues) Presented below are selected transactions of Lombardino Restaurant for the month ending August 31, 2025.

a. Lombardino sells 80 gift cards at $75 per gift card and 50 of the gift cards are redeemed by year end. It is estimated that 10 of the gift cards will not be redeemed.

b. Lombardino accepted a reservation for its private dining room for a rehearsal dinner in September. It received a security deposit of $300, which will be returned after the dinner is held.

Instructions

Prepare entries for the Lombardino transactions.

E12.10 (LO 3) (Warranties) Soundgarden Company sold 200 color laser copiers on July 10, 2025, for $4,000 apiece, together with a 1-year warranty. Maintenance on each copier during the warranty period is estimated to be $330.

Instructions

Prepare entries to record the sale of the copiers, the related warranty costs, and any accrual on December 31, 2025. Actual warranty costs (inventory) incurred in 2025 were $17,000.

E12.11 (LO 3) (Warranties) Early in 2025, Crow Equipment sold 500 Rollomatics at $6,000 each. During 2025, Crow spent $20,000 servicing the 2-year assurance warranties that accompany the Rollomatic. All sales transactions are on a cash basis.

Instructions

a. Prepare 2025 entries for Crow. Assume that Crow estimates the total cost of servicing the warranties in the second year will be $35,000.

b. Prepare 2025 entries for Crow assuming that the warranties are not an integral part of the sale (a service-type warranty). Assume that of the sales total, $56,000 relates to sales of warranty contracts. Warranty costs incurred in 2025 were $20,000. Estimate revenues to be recognized on a straight-line basis.

E12.12 (LO 3) (Premium Entries) No Doubt Company includes one coupon in each box of soap powder that it packs, and 10 coupons are redeemable for a premium (a kitchen utensil). In 2025, No Doubt Company purchased 8,800 premiums at 80 cents each and sold 110,000 boxes of soap powder at $3.30 per box; 44,000 coupons were presented for redemption in 2025. It is estimated that 60% of the coupons will eventually be presented for redemption.

Instructions

Prepare all the entries that would be made relative to sales of soap powder and to the premium plan in 2025.

E12.13 (LO 3) (Contingencies) Presented below are three independent situations. Answer the question at the end of each situation.

1. During 2025, Salt-n-Pepa Inc. became involved in a tax dispute with the IRS. Salt-n-Pepa's attorneys have indicated that they believe it is probable that Salt-n-Pepa will lose this dispute. They also believe that Salt-n-Pepa will have to pay the IRS between $900,000 and $1,400,000. After the 2025 financial statements were issued, the case was settled with the IRS for $1,200,000. What amount, if any, should be reported as a liability for this contingency as of December 31, 2025?

2. On October 1, 2025, Jackson Chemical was identified as a potentially responsible party by the Environmental Protection Agency. Jackson's management along with its counsel have concluded that it is probable that Jackson will be responsible for damages, and a reasonable estimate of these damages is $5,000,000. Jackson's insurance policy of $9,000,000 has a deductible clause of $500,000. How should Jackson Chemical report this information in its financial statements at December 31, 2025?

3. Etheridge Inc. had a manufacturing plant in Sudan, which was destroyed in the civil war. It is not certain who will compensate Etheridge for this destruction, but Etheridge has been assured by governmental officials that it will receive a definite amount for this plant. The amount of the compensation will be less than the fair value of the plant, but more than its book value. How should the contingency be reported in the financial statements of Etheridge Inc.?

E12.14 (LO 3) Groupwork (Premiums) The following are three independent situations.

1. Hairston Rewards Inc. provides rewards services to licensees. Hairston records service revenue related to rewards (granted as reward vouchers, which can be redeemed at a variety of retailers) and recognizes the cost of redemptions in the year vouchers are sold to licensees. Hairston's past experience indicates that only 80% of the vouchers sold to licensees will be redeemed. Hairston's liability for stamp redemptions was $13,000,000 at December 31, 2024. Additional information for 2025 is as follows.

Service revenue from vouchers sold to licensees	$9,500,000
Cost of redemptions (vouchers sold prior to 1/1/25)	6,000,000

   If all the vouchers sold in 2025 were presented for redemption in 2026, the redemption cost would be $5,200,000. What amount should Hairston report as a liability for voucher redemptions at December 31, 2025?

2. In packages of its products, Burnitz Inc. includes coupons that may be presented at retail stores to obtain discounts on other Burnitz products. Retailers are reimbursed for the face amount of coupons redeemed plus 10% of that amount for handling costs. Burnitz honors requests for coupon redemption by retailers up to 3 months after the consumer expiration date. Burnitz estimates that 60% of all coupons issued will ultimately be redeemed. Information relating to coupons issued by Burnitz during 2025 is as follows.

Consumer expiration date	12/31/25
Total face amount of coupons issued	$800,000
Total payments to retailers as of 12/31/25	330,000

   What amount should Burnitz report as a liability for unredeemed coupons at December 31, 2025?

3. Roland Company sold 700,000 boxes of pie mix under a new sales promotional program. Each box contains one coupon, which submitted with $4.00, entitles the customer to a baking pan. Roland pays $6.00 per pan and $0.50 for handling and shipping. Roland estimates that 70% of the coupons will be redeemed, even though only 250,000 coupons had been processed during 2025. What amount should Roland report as a liability for unredeemed coupons at December 31, 2025?

(AICPA adapted)

E12.15 (LO 4) (Refinancing of Short-Term Debt) On December 31, 2025, McDaniel Company had $1,200,000 of short-term debt in the form of notes payable due February 2, 2026. On January 21, 2026, the company issued 25,000 shares of its common stock for $38 per share, receiving $950,000 proceeds after brokerage fees and other costs of issuance. On February 2, 2026, the proceeds from the stock sale, supplemented by an additional $250,000 cash, are used to liquidate the $1,200,000 debt. The December 31, 2025, balance sheet is issued on February 23, 2026.

Instructions

Show how the $1,200,000 of short-term debt should be presented on the December 31, 2025, balance sheet, including note disclosure.

E12.16 (LO 4) (Refinancing of Short-Term Debt) On December 31, 2025, Holmes Company has $7,000,000 of short-term debt in the form of notes payable to Gotham State Bank due in 2026. On December 28, 2025, Holmes enters into a refinancing agreement with Gotham that will permit it to borrow up to 60% of the gross amount of its accounts receivable. Receivables are expected to range between a low of $6,000,000 in May to a high of $8,000,000 in October during the year 2026. The interest cost of the maturing short-term debt is 15%, and the new agreement calls for a fluctuating interest at 1% above the prime rate on notes due in 2030. Holmes's December 31, 2025, balance sheet is issued on February 15, 2026.

Instructions

Prepare a partial balance sheet for Holmes at December 31, 2025, showing how its $7,000,000 of short-term debt should be presented, including footnote disclosure.

E12.17 (LO 4) (Financial Statement Impact of Liability Transactions) Presented below is a list of possible transactions.

1. Purchased inventory for $80,000 on account (assume perpetual system is used).
2. Issued an $80,000 note payable in payment on account (see item 1 above).
3. Recorded accrued interest on the note from item 2 above.
4. Borrowed $100,000 from the bank by signing a 6-month, $112,000, zero-interest-bearing note.
5. Recognized 4 months' interest expense on the note from item 4 above.
6. Recorded cash sales of $75,260, which includes 6% sales tax.
7. Recorded wage expense of $35,000. The cash paid was $25,000; the difference was due to various amounts withheld.
8. Recorded employer's payroll taxes.
9. Accrued accumulated vacation pay.
10. Recorded bonuses due to employees.
11. Sold gift cards totaling $7,000.
12. Recorded a contingent loss on a lawsuit that the company will probably lose.
13. Accrued warranty expense.
14. Paid warranty costs that were accrued in item 13 above.
15. Recorded sales of product and related service-type warranties.
16. Paid warranty costs under contracts from item 15 above.
17. Recognized warranty revenue (see item 15 above).
18. Recorded estimated liability for premium claims outstanding.

Instructions

Set up a table using the format shown below and analyze the effect of the 18 transactions on the financial statement categories indicated.

#	Assets	Liabilities	Stockholders' Equity	Net Income
1				

Use the following code:

I: Increase D: Decrease NE: No effect

E12.18 (LO 4) (Ratio Computations and Discussion) Sprague Company has been operating for several years, and on December 31, 2025, presented the following balance sheet.

Sprague Company
Balance Sheet
December 31, 2025

Cash	$ 40,000	Accounts payable	$ 80,000
Receivables	75,000	Mortgage payable	140,000
Inventory	95,000	Common stock ($1 par)	150,000
Plant assets (net)	220,000	Retained earnings	60,000
	$430,000		$430,000

The net income for 2025 was $25,000. Assume that total assets are the same in 2024 and 2025.

Instructions

Compute each of the following ratios. For each of the four, indicate the manner in which it is computed and its significance as a tool in the analysis of the financial soundness of the company (round answers to two decimal points).

a. Current ratio.
b. Acid-test ratio.
c. Debt to assets ratio.
d. Return on assets.

E12.19 (LO 4) (Ratio Computations and Analysis) Prior Company's condensed financial statements provide the following information.

Prior Company
Balance Sheet

	Dec. 31, 2025	Dec. 31, 2024
Cash	$ 52,000	$ 60,000
Accounts receivable (net)	198,000	80,000
Short-term investments	80,000	40,000
Inventory	440,000	360,000
Prepaid expenses	3,000	7,000
Total current assets	$ 773,000	$ 547,000
Property, plant, and equipment (net)	857,000	853,000
Total assets	$1,630,000	$1,400,000
Current liabilities	240,000	160,000
Bonds payable	400,000	400,000
Common stockholders' equity	990,000	840,000
Total liabilities and stockholders' equity	$1,630,000	$1,400,000

Income Statement
For the Year Ended 2025

Sales revenue	$1,640,000
Cost of goods sold	(800,000)
Gross profit	840,000
Selling and administrative expenses	(440,000)
Interest expense	(40,000)
Net income	$ 360,000

Instructions

a. Determine the following for 2025 (round answers to two decimal points).

1. Current ratio at December 31.

2. Acid-test ratio at December 31.

3. Accounts receivable turnover.

4. Inventory turnover.

5. Return on assets.

6. Profit margin on sales.

b. Prepare a brief evaluation of the financial condition of Prior Company and of the adequacy of its profits.

E12.20 (LO 4) (Ratio Computations and Effect of Transactions) Presented below is information related to Carver Inc.

Carver Inc.
Balance Sheet
December 31, 2025

Cash		$ 45,000	Notes payable (short-term)	$ 50,000
Receivables	$110,000		Accounts payable	32,000
Less: Allowance	15,000	95,000	Accrued liabilities	5,000
Inventory		170,000	Common stock (par $5)	260,000
Prepaid insurance		8,000	Retained earnings	141,000
Land		20,000		
Equipment (net)		150,000		
		$488,000		$488,000

Carver Inc. Income Statement For the Year Ended December 31, 2025		
Sales revenue		$1,400,000
Cost of goods sold		
Inventory, Jan. 1, 2025	$200,000	
Purchases	790,000	
Cost of goods available for sale	990,000	
Inventory, Dec. 31, 2025	(170,000)	
Cost of goods sold		820,000
Gross profit on sales		580,000
Operating expenses		170,000
Net income		$ 410,000

Instructions

a. Compute the following ratios or relationships of Carver Inc. Assume that the ending account balances are representative unless the information provided indicates differently.

1. Current ratio.
2. Inventory turnover.
3. Accounts receivable turnover.
4. Earnings per share.
5. Profit margin on sales.
6. Return on assets on December 31, 2025.

b. Indicate for each of the following transactions whether the transaction would improve, weaken, or have no effect on the current ratio of Carver Inc. at December 31, 2025.

1. Write off an uncollectible account receivable, $2,200.
2. Purchase additional capital stock for cash.
3. Pay $40,000 on notes payable (short-term).
4. Collect $23,000 on accounts receivable.
5. Buy equipment on account.
6. Give an existing creditor a short-term note in settlement of account.

Problems

P12.1 (LO 1) Groupwork (Current Liability Entries and Adjustments) Described below are certain transactions of Edwardson Corporation. The company uses the periodic inventory system.

1. On February 2, the corporation purchased goods from Martin Company for $70,000 subject to cash discount terms of 2/10, n/30. Purchases and accounts payable are recorded by the corporation at net amounts after cash discounts. The invoice was paid on February 26.
2. On April 1, the corporation bought a truck for $50,000 from General Motors Company, paying $4,000 in cash and signing a 1-year, 12% note for the balance of the purchase price.
3. On May 1, the corporation borrowed $83,000 from Chicago National Bank by signing a $92,000 zero-interest-bearing note due 1 year from May 1.

Instructions

a. Make all the journal entries necessary to record the transactions above using appropriate dates.

b. Edwardson Corporation's year-end is December 31. Assuming that no adjusting entries relative to the transactions above have been recorded, prepare any adjusting journal entries concerning interest that are necessary to present fair financial statements at December 31. Assume straight-line amortization of discounts.

P12.2 (LO 1, 2) Excel (Liability Entries and Adjustments) Listed below are selected transactions of Schultz Department Store for the current year ending December 31.

1. On December 5, the store received $500 from the Selig Players as a deposit to be returned after certain furniture to be used in stage production was returned on January 15.

2. During December, cash sales totaled $798,000, which includes the 5% sales tax that must be remitted to the state by the fifteenth day of the following month.
3. On December 10, the store purchased for cash three delivery trucks for $120,000. The trucks were purchased in a state that applies a 5% sales tax.
4. The store sold 25 gift cards for $100 per card. At year-end, 20 of the gift cards are redeemed. Schultz expects three of the cards to expire unused.

Instructions

Prepare all the journal entries necessary to record the transactions noted above as they occurred and any adjusting journal entries relative to the transactions that would be required to present fair financial statements at December 31. Date each entry. For simplicity, assume that adjusting entries are recorded only once a year on December 31. (Ignore Cost of Goods Sold.)

P12.3 (LO 1) (Payroll Tax Entries) Cedarville Company pays its office employee payroll weekly. Below is a partial list of employees and their payroll data for August. Because August is their vacation period, vacation pay is also listed.

Employee	Earnings to July 31	Weekly Pay	Vacation Pay to Be Received in August
Mark Hamill	$4,200	$200	–
Karen Robbins	3,500	150	$300
Brent Kirk	2,700	110	220
Alec Guinness	7,400	250	–
Ken Sprouse	8,000	330	660

Assume that the federal income tax withheld is 10% of wages. Union dues withheld are 2% of wages. Vacations are taken the second and third weeks of August by Robbins, Kirk, and Sprouse. The state unemployment tax rate is 2.5% and the federal is 0.8%, both on a $7,000 maximum. The FICA rate is 7.65% on employee and employer on a maximum of $142,800 per employee. In addition, a 1.45% rate is charged both employer and employee for an employee's wages in excess of $142,800.

Instructions

Make the journal entries necessary for each of the four August payrolls. The entries for the payroll and for the company's liability are made separately. Also make the entry to record the monthly payment of accrued payroll liabilities.

P12.4 (LO 1) Excel (Payroll Tax Entries) The following is a payroll sheet for Otis Imports for the month of September 2025. The company is allowed a 1% unemployment compensation rate by the state; the federal unemployment tax rate is 0.8% and the maximum for both is $7,000. Assume a 10% federal income tax rate for all employees and a 7.65% FICA tax on employee and employer on a maximum of $142,800. In addition, 1.45% is charged both employer and employee for an employee's wages in excess of $142,800 per employee.

Name	Earnings to Aug. 31	September Earnings	Income Tax Withholding	FICA	Unemployment Tax	
					State	Federal
B.D. Williams	$ 6,800	$ 800				
D. Raye	6,500	700				
K. Baker	7,600	1,100				
F. Lopez	13,600	1,900				
A. Daniels	131,300	13,000				
B. Kingston	136,300	16,000				

Instructions

a. Complete the payroll sheet and make the necessary entry to record the payment of the payroll.
b. Make the entry to record the payroll tax expenses of Otis Imports.
c. Make the entry to record the payment of the payroll liabilities created. Assume that the company pays all payroll liabilities at the end of each month.

P12.5 (LO 3) Groupwork (Warranties) Brooks Corporation sells computers under a 2-year warranty contract that requires the corporation to replace defective parts and to provide the necessary repair labor. During 2025, the corporation sells for cash 400 computers at a unit price of $2,500. On the basis of past experience, the 2-year warranty costs are estimated to be $155 for parts and $185 for labor per unit. (For simplicity, assume that all sales occurred on December 31, 2025.) The warranty is not sold separately from the computer.

Instructions

a. Record any necessary journal entries in 2025.

b. What liability relative to these transactions would appear on the December 31, 2025, balance sheet and how would it be classified?

c. In 2026, the actual warranty costs to Brooks Corporation were $21,400 for parts and $39,900 for labor. Record any necessary journal entries in 2026.

P12.6 (LO 3) (Extended Warranties) Dos Passos Company sells televisions at an average price of $900 and also offers to each customer a separate 3-year warranty contract for $90 that requires the company to perform periodic services and to replace defective parts. During 2025, the company sold 300 televisions and 270 warranty contracts for cash. It estimates the 3-year warranty costs as $20 for parts and $40 for labor, and accounts for warranties separately. Assume sales occurred on December 31, 2025, and straight-line recognition of warranty revenues occurs.

Instructions

a. Record any necessary journal entries in 2025.

b. What liability relative to these transactions would appear on the December 31, 2025, balance sheet and how would it be classified?

In 2026, Dos Passos Company incurred actual costs relative to 2025 television warranty sales of $2,000 for parts and $4,000 for labor.

c. Record any necessary journal entries in 2026 relative to 2025 television warranties.

d. What amounts relative to the 2025 television warranties would appear on the December 31, 2026, balance sheet and how would they be classified?

P12.7 (LO 3) (Warranties) Alvarado Company sells a machine for $7,400 with a 12-month warranty agreement that requires the company to replace all defective parts and to provide the repair labor at no cost to the customers. With sales being made evenly throughout the year, the company sells 600 machines in 2025 (warranty expense is incurred half in 2025 and half in 2026). As a result of product testing, the company estimates that the total warranty cost is $390 per machine ($170 parts and $220 labor).

Instructions

Assuming that actual warranty costs are incurred exactly as estimated, what journal entries would be made relative to the following facts?

a. Sale of machinery and warranty expense incurred in 2025.

b. Warranty accrual on December 31, 2025.

c. Warranty costs incurred in 2026.

d. What amount, if any, is disclosed in the balance sheet as a liability for future warranty costs as of December 31, 2025?

P12.8 (LO 3) (Premium Entries) To stimulate the sales of its Alladin breakfast cereal, Loptien Company places 1 coupon in each box. Five coupons are redeemable for a premium consisting of a children's hand puppet. In 2026, the company purchases 40,000 puppets at $1.50 each and sells 480,000 boxes of Alladin at $3.75 a box. From its experience with other similar premium offers, the company estimates that 40% of the coupons issued will be mailed back for redemption. During 2026, 115,000 coupons are presented for redemption.

Instructions

Prepare the journal entries that should be recorded in 2026 relative to the premium plan.

P12.9 (LO 3, 4) (Premium Entries and Financial Statement Presentation) Sycamore Candy offers an MP3 download (seven-single medley) as a premium for every five candy bar wrappers presented by customers together with $2.50. The candy bars are sold by the company to distributors for 30¢ each. The purchase price of each download code to the company is $2.25. In addition, it costs 50¢ to distribute each code. The results of the premium plan for the years 2025 and 2026 are as follows. (All purchases and sales are for cash.)

	2025	2026
MP3 codes purchased	250,000	330,000
Candy bars sold	2,895,400	2,743,600
Wrappers redeemed	1,200,000	1,500,000
2025 wrappers expected to be redeemed in 2026	290,000	
2026 wrappers expected to be redeemed in 2027		350,000

Instructions

a. Prepare the journal entries that should be made in 2025 and 2026 to record the transactions related to the premium plan of the Sycamore Candy.

b. Indicate the account names, amounts, and classifications of the items related to the premium plan that would appear on the balance sheet and the income statement at the end of 2025 and 2026.

P12.10 (LO 3) Writing (Loss Contingencies: Entries and Essay) On November 24, 2025, 26 passengers on Windsor Airlines Flight No. 901 were injured upon landing when the plane skidded off the runway. Personal injury suits for damages totaling $9,000,000 were filed on January 11, 2026, against the airline by 18 injured passengers. The airline carries no insurance. Legal counsel has studied each suit and advised Windsor that it is probable that it will pay 60% of the damages claimed. The financial statements for the year ended December 31, 2025, were issued February 27, 2026.

Instructions

a. Prepare any disclosures and journal entries required by the airline in preparation of the December 31, 2025, financial statements.

b. Ignoring the November 24, 2025, accident, what liability due to the risk of loss from lack of insurance coverage should Windsor Airlines record or disclose? During the past decade, the company has experienced at least one accident per year and incurred average damages of $3,200,000. Discuss fully.

P12.11 (LO 3) Writing (Loss Contingencies: Entries and Essays) Polska Corporation, in preparation of its December 31, 2025, financial statements, is attempting to determine the proper accounting treatment for each of the following situations.

1. As a result of uninsured accidents during the year, personal injury suits for $700,000 and $120,000 have been filed against the company. It is the judgment of Polska's legal counsel that an unfavorable outcome is unlikely in the $120,000 case but that an unfavorable verdict approximating $500,000 (reliably estimated) will probably result in the $700,000 case.
2. Polska owns a subsidiary in a foreign country that has a book value of $5,725,000 and an estimated fair value of $9,500,000. The foreign government has communicated to Polska its intention to expropriate the assets and business of all foreign investors. On the basis of settlements other firms have received from this same country, Polska expects to receive 40% of the fair value of its properties as final settlement.
3. Polska's chemical product division consisting of five plants is uninsurable because of the special risk of injury to employees and losses due to fire and explosion. The year 2025 is considered one of the safest (luckiest) in the division's history because no loss due to injury or casualty was suffered. Having suffered an average of three casualties a year during the rest of the past decade (ranging from $60,000 to $700,000), management is certain that next year the company will probably not be so fortunate.

Instructions

a. Prepare the journal entries that should be recorded as of December 31, 2025, to recognize each of the situations above.

b. Indicate what should be reported relative to each situation in the financial statements and accompanying notes. Explain why.

P12.12 (LO 3) (Warranties and Premiums) Garison Music Emporium carries a wide variety of musical instruments, sound reproduction equipment, recorded music, and sheet music. Garison uses two sales promotion techniques—warranties and premiums—to attract customers.

Musical instruments and sound equipment are sold with a 1-year warranty for replacement of parts and labor. The estimated warranty cost, based on past experience, is 1% of sales.

The premium is offered on the recorded and sheet music. Customers receive a coupon for each dollar spent on recorded music or sheet music. Customers may exchange 200 coupons and $20 for an MP3 player. Garison pays $32 for each player and estimates that 60% of the coupons given to customers will be redeemed.

Garison's total sales for 2025 were $7,200,000—$5,700,000 from musical instruments and sound reproduction equipment and $1,500,000 from recorded music and sheet music. Replacement parts and labor for warranty work totaled $94,000 during 2025 ($44,000 of the work is related to pre-2025 sales). A total of 6,500 players used in the premium program were purchased during the year and there were 1,200,000 coupons redeemed in 2025.

The balances in the accounts related to warranties and premiums on January 1, 2025, were as shown below.

Premium Inventory	$37,600
Premium Liability	44,800
Warranty Liability	56,000

Instructions

Garison Music Emporium is preparing its financial statements for the year ended December 31, 2025. Determine the amounts that will be shown on the 2025 financial statements for the following.

a. Warranty Expense.
b. Warranty Liability.
c. Premium Expense.
d. Premium Inventory.
e. Premium Liability.

(CMA adapted)

P12.13 (LO 3) Writing Groupwork **(Liability Errors)** You are the independent auditor engaged to audit Millay Corporation's December 31, 2025, financial statements. Millay manufactures household appliances. During the course of your audit, you discovered the following contingent liabilities.

1. Millay began production of a new dishwasher in June 2025 and, by December 31, 2025, sold 120,000 to various retailers for $500 each. Each dishwasher is under a 1-year warranty. The company estimates that its warranty expense per dishwasher will amount to $25. At year-end, the company had already paid out $1,000,000 in warranty expenses. Millay's income statement shows warranty expenses of $1,000,000 for 2025.
2. In response to your attorney's letter, Morgan Sondgeroth, Esq., has informed you that Millay has been cited for dumping toxic waste into the Kishwaukee River. Clean-up costs and fines amount to $2,750,000. Although the case is still being contested, Sondgeroth is certain that Millay will most probably have to pay the fine and clean-up costs. No disclosure of this situation was found in the financial statements.
3. Millay is the defendant in a patent infringement lawsuit by Megan Drabek over Millay's use of a hydraulic compressor in several of its products. Sondgeroth claims that, if the suit goes against Millay, the loss may be as much as $5,000,000. However, Sondgeroth believes the loss of this suit to be only reasonably possible. Again, no mention of this suit is made in the financial statements.

As presented, these contingencies are not reported in accordance with GAAP, which may create problems in issuing a favorable audit report. You feel the need to note these problems in the work papers.

Instructions

Heading each page with the name of the company, balance sheet date, and a brief description of the problem, write a brief narrative for each of the above issues in the form of **a memorandum** to be incorporated in the audit work papers. Explain what led to the discovery of each problem, what the problem really is, and what you advised your client to do (along with any appropriate journal entries) in order to bring these contingencies in accordance with GAAP.

P12.14 (LO 3) **(Warranty and Coupon Computation)** Schmitt Company must make computations and adjusting entries for the following independent situations at December 31, 2026.

1. Its line of amplifiers carries a 3-year warranty against defects. On the basis of past experience, the estimated warranty costs related to dollar sales are first year after sale—2% of sales revenue; second year after sale—3% of sales revenue; and third year after sale—5% of sales revenue. Sales and actual warranty expenditures for the first 3 years of business were:

	Sales Revenue	Warranty Expenditures
2024	$ 800,000	$ 6,500
2025	1,100,000	17,200
2026	1,200,000	62,000

Instructions

Compute the amount that Schmitt should report as a liability in its December 31, 2026, balance sheet. Assume that all sales are made evenly throughout each year with warranty expenses also evenly spaced relative to the rates above.

2. With some of its products, Schmitt includes coupons that are redeemable in merchandise. The coupons have no expiration date and, in the company's experience, 40% of them are redeemed. The liability for unredeemed coupons at December 31, 2025, was $9,000. During 2026, coupons worth $30,000 were issued, and merchandise worth $8,000 was distributed in exchange for coupons redeemed.

Instructions

Compute the amount of the liability that should appear on the December 31, 2025, balance sheet.

(AICPA adapted)

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ12.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to these financial statements and the accompanying notes to answer the following questions.

a. What was P&G's 2020 short-term debt and related weighted-average interest rate on this debt?

b. What was P&G's 2020 working capital, acid-test ratio, and current ratio? Comment on P&G's liquidity.

c. What types of commitments and contingencies has P&G's reported in its financial statements? What is management's reaction to these contingencies?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ12.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. How much working capital do each of these companies have at the end of 2020?

b. Compute each company's (a) current cash debt coverage, (b) cash debt coverage, (c) current ratio, (d) acid-test ratio, (e) accounts receivable turnover, and (f) inventory turnover for 2020. Comment on each company's overall liquidity.

c. What types of loss or gain contingencies do these two companies have at the end of 2020?

Financial Statement Analysis Case: Northland Cranberries

UYJ12.3 Despite being a publicly traded company only since 1987, **Northland Cranberries** of Wisconsin Rapids, Wisconsin, is one of the world's largest cranberry growers. During its short life as a publicly traded corporation, it has engaged in an aggressive growth strategy. As a consequence, the company has taken on significant amounts of both short-term and long-term debt. The following information is taken from recent annual reports of the company.

	Current Year	Prior Year
Current assets	$ 6,745,759	$ 5,598,054
Total assets	107,744,751	83,074,339
Current liabilities	10,168,685	4,484,687
Total liabilities	73,118,204	49,948,787
Shareholders' equity	34,626,547	33,125,552
Net sales	21,783,966	18,051,355
Cost of goods sold	13,057,275	8,751,220
Interest expense	3,654,006	2,393,792
Income tax expense	1,051,000	1,917,000
Net income	1,581,707	2,942,954

Instructions

a. Evaluate the company's liquidity by calculating and analyzing working capital and the current ratio.

b. The discussion of the company's liquidity, shown below, was provided by the company in the Management Discussion and Analysis section of the company's annual report. Comment on whether you agree with management's statements, and what might be done to remedy the situation.

The lower comparative current ratio in the current year was due to $3 million of short-term borrowing then outstanding which was incurred to fund the Yellow River Marsh acquisitions last year. As a result of the extreme seasonality of its business, the company does not believe that its current ratio or its underlying stated working capital at the current, fiscal year-end is a meaningful indication of the Company's liquidity. As of March 31 of each fiscal year, the Company has historically carried no significant amounts of inventories and by such date all of the Company's accounts receivable from its crop sold for processing under the supply agreements have been paid in cash, with the resulting cash received from such payments used to reduce indebtedness. The Company utilizes its revolving bank credit facility, together with cash generated from operations, to fund its working capital requirements throughout its growing season.

Financial Statement Analysis Case: Mohican Company

UYJ12.4 Presented below is the current liabilities section and related note of Mohican Company.

	(dollars in thousands)	
	Current Year	**Prior Year**
Current liabilities		
Current portion of long-term debt	$ 15,000	$ 10,000
Short-term debt	2,668	405
Accounts payable	29,495	42,427
Accrued warranty	16,843	16,741
Accrued marketing programs	17,512	16,585
Other accrued liabilities	35,653	33,290
Accrued and deferred income taxes	16,206	17,348
Total current liabilities	$133,377	$136,796

Notes to Consolidated Financial Statements

Note 1 (in part): Summary of Significant Accounting Policies and Related Data

Accrued Warranty The company provides an accrual for future warranty costs based upon the relationship of prior years' sales to actual warranty costs.

Instructions

Answer the following questions.

a. What is the difference between the cash basis and the accrual basis of accounting for warranty costs?

b. Under what circumstance, if any, would it be appropriate for Mohican Company to recognize deferred revenue on warranty contracts?

c. If Mohican Company recognized deferred revenue on warranty contracts, how would it recognize this revenue in subsequent periods?

Financial Statement Analysis Case: BOP Clothing Co.

UYJ12.5 As discussed in the chapter, an important consideration in evaluating current liabilities is a company's operating cycle. The operating cycle is the average time required to go from cash to cash in generating revenue. To determine the length of the operating cycle, analysts use two measures: the average days to sell inventory (*inventory days*) and the average days to collect receivables (*receivable days*). The inventory-days computation measures the average number of days it takes to move an item from raw materials or purchase to final sale (from the day it comes in the company's door to the point it is converted to cash or an account receivable). The receivable-days computation measures the average number of days it takes to collect an account.

Most businesses must then determine how to finance the period of time when the liquid assets are tied up in inventory and accounts receivable. To determine how much to finance, companies first determine accounts payable days—how long it takes to pay creditors. Accounts payable days measures the number of days it takes to pay a supplier invoice. Consider the following operating cycle worksheet for BOP Clothing Co.

	2024	2025
Cash	$ 45,000	$ 30,000
Accounts receivable	250,000	325,000
Inventory	830,000	800,000
Accounts payable	720,000	775,000
Purchases	1,100,000	1,425,000
Cost of goods sold	1,145,000	1,455,000
Sales	1,750,000	1,950,000
Operating Cycle		
Inventory days[1]	264.6	200.7
Receivable days[2]	52.1	60.8
Operating cycle	316.7	261.5
Less: Accounts payable days[3]	238.9	198.5
Days to be financed	77.8	63.0
Working capital	$ 405,000	$ 380,000
Current ratio	1.56	1.49
Acid-test ratio	0.41	0.46

[1]Inventory days = (Inventory × 365) ÷ Cost of goods sold
[2]Receivable days = (Accounts receivable × 365) ÷ Sales
[3]Accounts payable days = (Accounts payable × 365) ÷ Purchases

Purchases = Cost of goods sold + Ending inventory − Beginning inventory.
The ratios above assume that other current assets and liabilities are negligible.

These data indicate that BOP has reduced its overall operating cycle (to 261.5 days) as well as the number of days to be financed with sources of funds other than accounts payable (from 78 to 63 days). Most businesses cannot finance the operating cycle with accounts payable financing alone, so working capital financing, usually short-term interest-bearing loans, is needed to cover the shortfall. In this case, BOP would need to borrow less money to finance its operating cycle in 2025 than in 2024.

Instructions

a. Use the BOP analysis to briefly discuss how the operating cycle data relate to the amount of working capital and the current and acid-test ratios.

b. Select two other real companies that are in the same industry and complete the operating cycle worksheet, along with the working capital and ratio analysis. Briefly summarize and interpret the results. To simplify the analysis, you may use ending balances to compute turnover ratios.

(Adapted from Operating Cycle Worksheet)

Accounting, Analysis, and Principles

UYJ12.6 YellowCard Company manufactures accessories for Apple products. It had the following selected transactions during 2025.

1. YellowCard provides a 2-year warranty on its docking stations, which it began selling in 2025. During 2025, YellowCard spent $6,000 servicing warranty claims. At year-end, YellowCard estimates that an additional $45,000 will be spent in the future to service warranties related to 2025 sales.
2. YellowCard has a $200,000 loan outstanding from First Trust Corp. The loan is set to mature on February 28, 2026. For several years, First Trust has agreed to extend the loan, as long as YellowCard makes all its quarterly interest payments (interest is due on the last days of each February, May, August, and November) and maintains an acid-test ratio (also called "quick ratio") of at least 1.25. First Trust has provided YellowCard a contractual right indicating that First Trust will extend the loan another 12 months, providing YellowCard has made interest payments.
3. On November 1, 2025, Yellowcard received an advance payment of $24,000 for design and manufacture of specialized iPhone holders that will mount on bicycles. The total invoice price for the order is $92,000.Yellowcard receives the remaining invoice price in cash when the adapters are delivered to the customer in March 2026 (with a total cost of $55,000).

(*Note:* For any part of this problem requiring an interest or discount rate, use 10%.)

Accounting

Prepare all 2025 journal entries relating to (a) YellowCard's warranties, (b) YellowCard's loan from First Trust Corp., and (c) the delivery of the special-order iPhone stands in March 2026.

Analysis

Describe how the transactions above affect ratios that might be used to assess YellowCard's liquidity. How important is the commitment letter that YellowCard has from First Trust Corp. to these ratios?

Principles

YellowCard is contemplating offering an extended warranty. If customers pay an additional $50 at the time of product purchase, YellowCard would extend the warranty an additional two years. Would the extended warranty meet the definition of a liability under current generally accepted accounting principles? Briefly explain.

Developing Your Professional Skills

Critical-Thinking Cases

CT12.1 (LO 1) (Nature of Liabilities) Presented below is the current liabilities section of Micro Corporation.

	($000)	
	2026	**2025**
Current liabilities		
Notes payable	$ 68,713	$ 7,700
Accounts payable	179,496	101,379
Compensation to employees	60,312	31,649
Accrued liabilities	158,198	77,621
Income taxes payable	10,486	26,491
Current maturities of long-term debt	16,592	6,649
Total current liabilities	$493,797	$251,489

Instructions

Answer the following questions.

a. What are the essential characteristics that make an item a liability?

b. How does one distinguish between a current liability and a long-term liability?

c. What are accrued liabilities? Give three examples of accrued liabilities that Micro might have.

d. What is the theoretically correct way to value liabilities? How are current liabilities usually valued?

e. Why are notes payable reported first in the current liabilities section?

f. What might be the items that comprise Micro's liability for "Compensation to employees"?

CT12.2 (LO 1, 2) (Current versus Noncurrent Classification) Rodriguez Corporation includes the following items in its liabilities at December 31, 2025.

1. Notes payable, $25,000,000, due June 30, 2026.
2. Deposits from customers on equipment ordered by them from Rodriguez, $6,250,000.
3. Salaries and wages payable, $3,750,000, due January 14, 2026.

Instructions

Indicate in what circumstances, if any, each of the three liabilities above would be excluded from current liabilities.

CT12.3 (LO 3) Writing (Loss Contingencies) On February 1, 2026, one of the huge storage tanks of Viking Manufacturing exploded. Windows in houses and other buildings within a one-mile radius of the explosion were severely damaged, and a number of people were injured. As of February 15, 2026 (when the December 31, 2025, financial statements were completed and sent to the publisher for printing and public distribution), no suits had been filed or claims asserted against the company as a consequence of the explosion. The company fully anticipates that suits will be filed and claims asserted for injuries and damages. Because the casualty was uninsured and the company is considered at fault, Viking Manufacturing will have to cover the damages from its own resources.

Instructions

Discuss fully the accounting treatment and disclosures that should be accorded the casualty and related contingent losses in the financial statements dated December 31, 2025.

CT12.4 (LO 3) (Loss Contingency) Presented below is a note disclosure for Matsui Corporation.

> **Litigation and Environmental:** The Company has been notified, or is a named or a potentially responsible party in a number of governmental (federal, state and local) and private actions

associated with environmental matters, such as those relating to hazardous wastes, including certain sites which are on the United States EPA National Priorities List ("Superfund"). These actions seek clean-up costs, penalties and/or damages for personal injury or to property or natural resources.

In 2025, the Company recorded a pre-tax charge of $56,229,000, included in the "Other expense (income)—net" caption of the Company's consolidated income statements, as an additional provision for environmental matters. These expenditures are expected to take place over the next several years and are indicative of the Company's commitment to improve and maintain the environment in which it operates. At December 31, 2020, environmental accruals amounted to $69,931,000, of which $61,535,000 are considered noncurrent and are included in the "Deferred credits and other liabilities" caption of the Company's consolidated balance sheets.

While it is impossible at this time to determine with certainty the ultimate outcome of environmental matters, it is management's opinion, based in part on the advice of independent counsel (after taking into account accruals and insurance coverage applicable to such actions) that when the costs are finally determined they will not have a material adverse effect on the financial position of the Company.

Instructions

Answer the following questions.

a. What conditions must exist before a loss contingency can be recorded in the accounts?

b. Suppose that Matsui Corporation could not reasonably estimate the amount of the loss, although it could establish with a high degree of probability the minimum and maximum loss possible. How should this information be reported in the financial statements?

c. If the amount of the loss is uncertain, how would the loss contingency be reported in the financial statements?

CT12.5 (LO 3) (Warranties and Loss Contingencies) The following two independent situations involve loss contingencies.

Part 1: Benson Company sells two products, Grey and Yellow. Each carries a 1-year warranty.

1. Product Grey—Product warranty costs, based on past experience, will normally be 1% of sales.
2. Product Yellow—Product warranty costs cannot be reasonably estimated because this is a new product line. However, the chief engineer believes that product warranty costs are likely to be incurred.

Instructions

How should Benson report the estimated product warranty costs for each of the two types of merchandise above? Discuss the rationale for your answer. Do not discuss disclosures that should be made in Benson's financial statements or notes.

Part 2: Constantine Company is being sued for $4,000,000 for an injury caused to a child as a result of alleged negligence while the child was visiting the Constantine Company plant in March 2020. The suit was filed in July 2020. Constantine's lawyer states that it is probable that Constantine will lose the suit and be found liable for a judgment costing anywhere from $400,000 to $2,000,000. However, the lawyer states that the most probable judgment is $1,000,000.

Instructions

How should Constantine report the suit in its 2020 financial statements? Discuss the rationale for your answer. Include in your answer disclosures, if any, that should be made in Constantine's financial statements or notes. (AICPA adapted)

CT12.6 (LO 3) Ethics (Warranties) The Dotson Company, owner of Bleacher Mall, charges Rich Clothing Store a rental fee of $600 per month plus 5% of yearly profits over $500,000. Matt Rich, the owner of the store, directs his accountant, Ron Hamilton, to increase the estimate of bad debt expense and warranty costs in order to keep profits at $475,000.

Instructions

Answer the following questions.

a. Should Hamilton follow his boss's directive?

b. Who is harmed if the estimates are increased?

c. Is Matt Rich's directive ethical?

CT12.7 (LO 4) Writing (Refinancing of Short-Term Debt) Dumars Corporation reports in the current liability section of its balance sheet at December 31, 2025 (its year-end), short-term obligations of $15,000,000, which includes the current portion of 12% long-term debt in the amount of $10,000,000 (matures in March 2026). Management has stated its intention to refinance the 12% debt whereby no portion of it will mature during 2026. The date of issuance of the financial statements is March 25, 2026.

Instructions

a. Is management's intent enough to support long-term classification of the obligation in this situation?

b. Assume that Dumars Corporation issues $13,000,000 of 10-year debentures to the public in January 2026 and that management intends to use the proceeds to liquidate the $10,000,000 debt maturing in March 2026. Furthermore, assume that the debt maturing in March 2026 is paid from these proceeds prior to the issuance of the financial statements. Will this have any impact on the balance sheet classification at December 31, 2025? Explain your answer.

c. Assume that Dumars Corporation, on December 15, 2025, entered into a financing agreement with a commercial bank that permits Dumars Corporation to borrow at any time through 2027 up to $15,000,000 at the bank's prime rate of interest. Borrowings under the financing agreement mature 3 years after the date of the loan. The agreement is not cancelable except for violation of a provision with which compliance is objectively determinable. No violation of any provision exists at the date of issuance of the financial statements. Assume further that the current portion of long-term debt does not mature until August 2026. In addition, management has the contractual right to refinance the $10,000,000 obligation under the terms of the financial agreement with the bank, which is expected to be financially capable of honoring the agreement.

1. Given these facts, should the $10,000,000 be classified as current on the balance sheet at December 31, 2025?
2. Is disclosure of the refinancing method required?

FASB Codification References

[1] FASB ASC 210-10-45-6. [Predecessor literature: Committee on Accounting Procedure, American Institute of Certified Public Accountants, "Accounting Research and Terminology Bulletins," Final Edition (New York: AICPA, 1961), p. 21.]

[2] FASB ASC 710-10-25-1. [Predecessor literature: "Accounting for Compensated Absences," *Statement of Financial Accounting Standards No. 43* (Stamford, Conn.: FASB, 1980), par. 6.]

[3] FASB ASC 712-10-05. [Predecessor literature: "Employers' Accounting for Postemployment Benefits," *Statement of Financial Accounting Standards No. 112* (Norwalk, Conn.: FASB, November 1992), par. 18.]

[4] FASB ASC 450-10-05-4. [Predecessor literature: "Accounting for Contingencies," *Statement of Financial Accounting Standards No. 5* (Stamford, Conn.: FASB, 1975), par. 1.]

[5] FASB ASC 450-20-30-1. [Predecessor literature: "Reasonable Estimation of the Amount of a Loss," *FASB Interpretation No. 14* (Stamford, Conn.: FASB, 1976), par. 3.]

[6] FASB ASC 450-10-05. [Predecessor literature: "Accounting for Contingencies," *FASB Statement No. 5* (Stamford, Conn.: FASB, 1975).]

[7] FASB ASC 606-10-55-353 to 356-3. [Predecessor literature: "Accounting for Separately Extended Warranty and Product Maintenance Contracts," *FASB Technical Bulletin No. 90-1* (Stamford, Conn.: FASB, 1990).]

[8] FASB ASC 450-20-55-5. [Predecessor literature: "Accounting for Contingencies," *FASB Statement No. 5* (Stamford, Conn.: FASB, 1975), par. 28.]

[9] FASB ASC 470-10-45-11. [Predecessor literature: "Classification of Obligations That Are Callable by the Creditor," *Statement of Financial Accounting Standards No. 78* (Stamford, Conn.: FASB, 1983).]

[10] FASB ASC 470-10-45-14. [Predecessor literature: "Classification of Short-term Obligations Expected to Be Refinanced," *Statement of Financial Accounting Standards No. 6* (Stamford, Conn.: FASB, 1975), para. 10 and 11.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE12.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of "current liabilities"?

b. What does it mean if something is "reasonably possible"?

c. What is a warranty?

CE12.2 What are three examples of estimates that are used in accounting that are not contingencies? Can you explain why they are not considered contingencies?

CE12.3 Under what conditions must an employer accrue a liability for employees' compensation for future absences?

Codification Research Case

Pleasant Co. manufactures specialty bike accessories. The company is known for product quality, and it has offered one of the best warranties in the industry on its higher-priced products—a lifetime guarantee, performing all the warranty work in its own shops. The warranty on these products is included in the sales price.

Due to the recent introduction and growth in sales of some products targeted to the low-price market, Pleasant is considering partnering with another company to do the warranty work on this line of products, if customers purchase a service contract at the time of original product purchase. Pleasant has called you to advise the company on the accounting for this new warranty arrangement.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the accounting literature that addresses the accounting for the type of separately priced extended warranty that Pleasant is considering.

b. When are warranty contracts considered separately priced?

c. When shall a loss be recognized on an extended warranty.

Additional Professional Resources

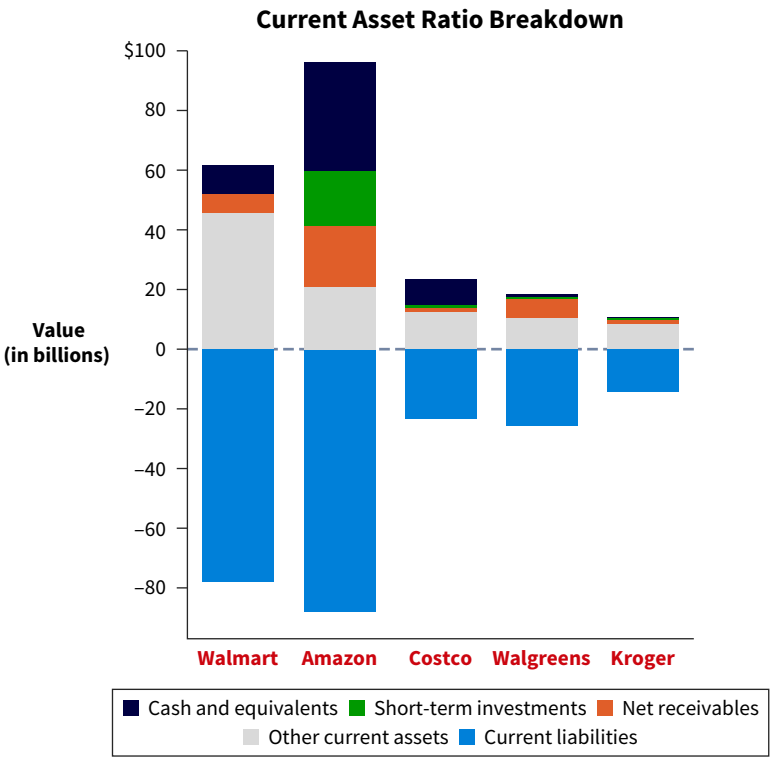
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Benchmark Liquidity Metrics

DA12.1 How much cash should we keep on hand? How long can we delay payment to our vendors? What is a "good" current ratio? These are common questions that companies must consider when evaluating their liquidity. Benchmarking metrics against other companies in the same industry can be helpful when making decisions around effective management of working capital.

The following graph breaks down the components of the current ratio for several companies in the retail industry, offering a visual of current liabilities compared to liquid assets on hand.



Required

Using data visualizations, you will benchmark several common liquidity measures for the retail industry and consider what insights this provides for effective working capital management.

Go to Wiley Course Resources for complete details and instructions.

DA12.2 The visualizations in DA12.1 can be used to compare liquidity measures among companies in the same industry, but they can also be used to help inform business strategies.

Required

Using the dashboard of data visualizations for companies in the retail industry, you will consider what the results mean for those companies and what tactics a company could use to enhance its liquidity.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Gain Company Insights

DA12.3 Public companies issue quarterly and annual financial data. Investors and creditors can track this data over time and benchmark the data against other companies or industries. Comparing financial metrics across different companies in the same industry can offer insights into the financial health of a company and perhaps even strategic priorities of management.

Required

Using Excel, you will calculate financial ratios for several companies in the retail industry. Using these ratios, you will answer questions about what insights you gained from the analysis.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 5

Compare the accounting procedures for current liabilities and contingencies under GAAP and IFRS.

IFRS and GAAP have similar definitions for liabilities. IFRS related to reporting and recognition of liabilities is found in *IAS 1* ("Presentation of Financial Statements") and *IAS 37* ("Provisions, Contingent Liabilities, and Contingent Assets"). Following are the key similarities and differences between GAAP and IFRS related to current liabilities and contingencies.

Similarities

- Similar to U.S. practice, IFRS requires that companies present current and non-current liabilities on the face of the statement of financial position (balance sheet), with current liabilities generally presented in order of liquidity. However, many companies using IFRS present non-current liabilities before current liabilities on the statement of financial position.
- The basic definition of a liability under GAAP and IFRS is very similar. In a more technical way, liabilities are defined by the IASB as a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits. Liabilities may be legally enforceable via a contract or law but need not be. That is, they can arise due to normal business practices or customs.
- IFRS requires that companies classify liabilities as current or non-current on the face of the statement of financial position (balance sheet), except in industries where a presentation based on liquidity would be considered to provide more useful information (such as financial institutions).
- Under IFRS, short-term obligations expected to be refinanced can be classified as non-current if the refinancing is completed by the financial statement date. GAAP now also uses the balance sheet date.

Differences

- Under IFRS, the measurement of a provision related to a contingency is based on the best estimate of the expenditure required to settle the obligation. If a range of estimates is predicted and no amount in the range is more likely than any other amount in the range, the "midpoint" of the range is used to measure the liability. In GAAP, the minimum amount in a range is used.
- Both IFRS and GAAP prohibit the recognition of liabilities for future losses. However, IFRS permits recognition of a restructuring liability, once a company has committed to a restructuring plan. GAAP has additional criteria (i.e., related to communicating the plan to employees) before a restructuring liability can be established.
- IFRS uses the term *provisions* to refer to estimated liabilities. Under IFRS, contingencies are not recorded but are often disclosed. The accounting for provisions under IFRS and estimated liabilities under GAAP are very similar.
- GAAP uses the term *contingency* in a different way than IFRS. Contingent liabilities are not recognized in the financial statements under IFRS, whereas under GAAP, a contingent liability is sometimes recognized.
- Under IFRS, short-term obligations expected to be refinanced can be classified as non-current if the refinancing is completed by the financial statement date. GAAP allows reclassification as non-current if the financing occurs before financial statements are issued.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 13

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Long-Term Liabilities

WHAT are long-term liabilities?

As indicated in Chapter 12, current liabilities are defined as "obligations whose liquidation is reasonably expected to require use of existing resources properly classified as current assets or the creation of other current liabilities." However, because no explicit definition of a noncurrent (long-term) liability is provided in current GAAP, many use the following approach: "If it does not meet the definition of a current liability, it must be long-term." This is to be applied to all long-term liabilities, the most common of which are bonds payable (long-term debt) and long-term notes payable (including mortgages payable).

Target Corporation
(dollars in millions)

Current assets	$12,902
Long-term assets	29,877
Total assets	$42,779
Current liabilities	$14,487
Noncurrent (long-term) liabilities	16,459
Total liabilities	30,946
Total stockholders' equity	11,833
Total liabilities and stockholders' equity	$42,779

WHY is information about long-term liabilities important?

Long-term creditors and stockholders are interested in a company's long-run solvency, particularly its ability to pay interest as it comes due and to repay the face value of the debt (bonds and notes payable) at maturity. The amounts reported in the balance sheet, along with note disclosures indicating the nature of the liabilities, maturity dates, interest rates, and so on, are the means through which this important information is provided. For example, consider the adjacent data from **Target**'s recent annual report.

Target has total liabilities of $30,946 (in millions). Its debt-to-assets ratio is therefore 72.3% ($30,946 ÷ $42,779). This means that Target is using liabilities to fund 72% of the assets it uses in operations, with the majority represented by long-term obligations (mostly bonds and notes payable). To make sense of what this really means, we might track this metric over time or compare it to the percentage of assets that **Walmart** funds with liabilities. Either way, it is easy to see why investors and creditors need good accounting information about long-term liabilities.

HOW do we account for long-term liabilities?

Accounting for notes and bonds is quite similar; they are reported at the present value of future cash flows. The accounting for long-term notes payable parallels accounting for long-term notes receivable, as was presented in Chapter 6. Notes and bonds payable are sometimes issued at amounts different than their face value. As a result, the interest expense recorded will include the effects of amortization of discounts or premiums. Also, companies have the option to record fair value for most financial assets and liabilities, including bonds and notes payable. Many believe that fair value is more relevant because it reflects the current cash equivalent value of financial instruments.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 13.1 Describe the nature of bonds and indicate the accounting for bond issuances.	**13.1 Bonds Payable** • Issuing bonds • Types of bonds • Valuation and accounting • Effective-interest method	Examples 13.1 Bond Pricing 13.2 Entries for Bond Issued at Par 13.3 Discount Amortization 13.4 Premium Amortization 13.5 Bonds Issued Between Interest Dates 13.6 Bonds Issued Between Interest Dates with Amortization 13.7 Pricing Bonds—Discount 13.8 Effective-Interest Amortization Put It into Practice LO 13.1 Record Bond Issue and Interest Payments
LO 13.2 Describe the accounting for the extinguishment of debt.	**13.2 Extinguishment of Debt** • Reacquisition price • Refunding	Example 13.9 Debt Extinguishment Put It into Practice LO 13.2 Record Debt Extinguishment
LO 13.3 Explain the accounting for long-term notes payable.	**13.3 Long-Term Notes Payable** • Notes issued at face value • Notes not issued at face value • Special situations • Mortgage notes payable	Examples 13.10 Zero-Interest-Bearing Note 13.11 Entries for Zero-Interest-Bearing Note 13.12 Interest-Bearing Note 13.13 Entries for Interest-Bearing Note 13.14 Note Issued for Goods/Services 13.15 Imputed Interest Note 13.16 Entries—Imputed Interest Note 13.17 Mortgage (Installment) Note Put It into Practice LO 13.3 Record Notes Payable
LO 13.4 Indicate how to present and analyze long-term debt.	**13.4 Reporting and Analyzing Liabilities** • Fair value option • Presentation and decision analysis	Examples 13.18 Fair Value Option 13.19 Fair Value Option—Credit Deterioration

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are available at Wiley Course Resources.

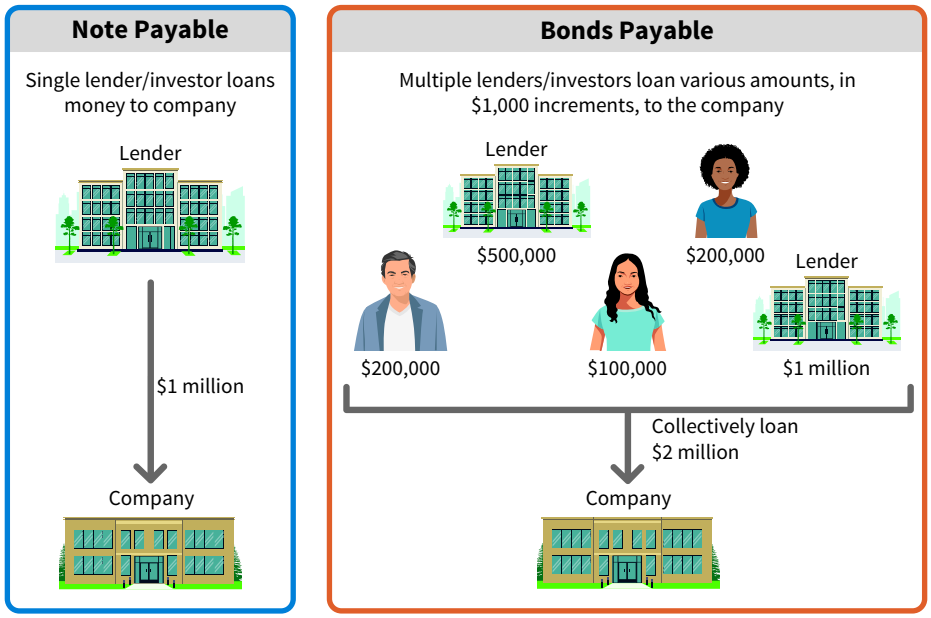
13.1 Bonds Payable

LEARNING OBJECTIVE 1

Describe the nature of bonds and indicate the accounting for bond issuances.

As indicated in the chapter preview, long-term (noncurrent) liabilities are obligations that do not meet the definition of a current liability. The most common long-term liabilities are long-term notes and bonds payable. **Illustration 13.1** shows the difference between a note payable and bonds payable.

ILLUSTRATION 13.1 Note versus Bonds Payable



- **Note payable**. When a single lender or investor loans money to a company, a note payable is created. The note is a legal document that specifies the important features of the note, such as the amount, maturity date, and the rate of interest to be paid. As indicated in illustration 13.1, one lender is loaning $1 million to the company.
- **Bonds payable**. A bond is a type of note payable in which the amount is divided into smaller pieces, usually $1,000 each. With more units, the company can issue bonds to more investors and raise more money, as compared to a single note payable to a single lender or investor. In Illustration 13.1, the company receives a total of $2 million from the bond issue. With smaller units, investors small and large can invest in the bonds. The contract governing a bond issue is called the **bond indenture**. It establishes the details of the bonds such as the amounts authorized to be issued, interest rate, due dates, and other important details.

Keep in mind that a lender or a bondholder is **not** an owner in the company like a stockholder. A lender or bondholder receives regular interest payments from the company, not dividends. At the maturity date of the notes or bonds payable, the company will pay back the amount borrowed to the lender or investors. Now let's cover how to account for notes and bonds payable, starting with bonds.

Issuing Bonds

A bond represents a promise to pay the following.

- A sum of money at a designated maturity date. The sum of money is the amount borrowed and is called the face value. It can also be called the par value, maturity value, or principal value.
- Periodic interest at a specified rate on the face value.

Individual bonds are evidenced by a paper certificate and typically have a $1,000 face value. Companies usually make bond interest payments semiannually, although the interest rate is generally expressed as an annual rate. The main purpose of bonds is to borrow for the long term when the amount of capital needed is too large for one lender to supply.

A company may sell an entire bond issue to an investment bank, which acts as a selling agent in the process of marketing the bonds. An investment bank will participate in the bond issue in one of two ways:

1. **Firm underwriting**. The investment bank will sell the bonds on behalf of the company and will guarantee a certain sum to the company. Therefore, the investment bank takes on the risk of selling the bonds for whatever price it can get.
2. **Best-efforts underwriting**. The investment bank will sell the bonds and receive a commission on the proceeds of the sale. No guarantees are made to the company.

Alternatively, the issuing company may sell the bonds directly to a large institution, financial or otherwise, without the aid of an underwriter. This is called private placement. Once the bonds are issued, they can be traded among investors in the organized public securities markets.

Types of Bonds

We define some of the more common types of bonds found in practice in Illustration 13.2.

ILLUSTRATION 13.2 Types of Bonds

Type of Bond	Characteristics
Secured	Bonds backed by a pledge of some sort of collateral. Mortgage bonds are secured by a claim on real estate. Collateral trust bonds are secured by stocks and bonds of other corporations.
Unsecured	Bonds not backed by collateral are **unsecured**. A **debenture bond** is unsecured. A "junk bond" is unsecured and also very risky, and therefore pays a high interest rate.
Term	Bonds that mature on a single date.
Serial	Bonds that mature in installments. Serially maturing bonds are frequently used by school or sanitary districts, municipalities, or other local taxing bodies that receive money through a special levy.
Callable	Bonds that give the issuer the right to call and redeem the bonds prior to maturity.
Convertible	Bonds that are convertible into other securities (usually common stock) of the corporation for a specified time after issuance.
Deep-discount (zero-interest debenture)	Bonds that are sold at a discount that provide the investor's total interest payoff at maturity.
Revenue	Bonds on which interest is paid from specified revenue sources; most frequently issued by airports, school districts, counties, toll-road authorities, and governmental bodies.
Income	Bonds that pay no interest unless the issuing company is profitable.

Valuation and Accounting for Bonds Payable

The issuance and marketing of bonds to the public does not happen overnight. It usually takes weeks or even months and is comprised of the following steps.

1. The issuing company arranges for underwriters that will help market and sell the bonds.
2. The company obtains the SEC's approval of the bond issue, undergoes audits, and issues a prospectus (a document that describes the features of the bond and related financial information).
3. The company has the bond certificates printed.

The issuing company establishes the terms of a bond indenture well in advance of the actual sale of the bonds. Between the time the company sets these terms and the time it issues the bonds, the market conditions and the financial position of the issuing corporation may change significantly. Such changes affect the marketability of the bonds and their selling price.

The selling price of a bond issue is impacted by several factors such as the supply and demand of buyers and sellers, relative risk, market conditions, and the state of the economy. Perhaps the biggest factor that impacts bond selling price is the relationship between the interest rate stated on the bonds and the market rate of interest at the time the bonds are issued. It's important that you understand these two interest rates:

1. **Stated (coupon or nominal) rate**. This is the interest rate written in the terms of the bond indenture. The issuer of the bonds sets this rate, which represents the amount of interest that will be paid on the face value of the bonds. This interest rate is fixed and will not change over the life of the bonds.
2. **Market (or effective) rate (effective yield)**. This is the prevailing interest rate in the investing markets for bonds with similar characteristics. It is driven by many factors, including the risk of the company, government policy, central bank interest rates, and the state of the economy. This interest rate fluctuates up or down over time.

To show you how these interest rates impact bond selling price, look at the information in **Illustration 13.3**.[1]

ILLUSTRATION 13.3 Interest Rate Impacts on Bond Price

	Stated Rate		Market Rate	Impact on Bond Price $1,000 Face Value
Situation 1	4%	<	5%	Bonds issued at a **discount** < $1,000
Situation 2	4%	>	3%	Bonds issued at a **premium** > $1,000

In Situation 1 in Illustration 13.3, the stated rate of interest on a $1,000 face value bond is 4%. If you invest in that bond, you will receive 4% interest, or $40 (.04 × $1,000) each year. At the time the bonds are issued, the current market rate of interest is 5%. That means you can earn a greater return on alternative investments of equal risk. So, what would you do? Invest in the bonds that earn 4% or invest in something else where you can earn 5%? You would invest elsewhere and earn 5%, and so would other investors!

However, if the bonds were offered at a discounted price, less than $1,000, then would you invest in the 4% bond? Sure, because although you would pay less than $1,000 for the bond, you would be repaid the full-face value of $1,000 at the maturity date. Therefore, to compensate for the lower stated interest rate, the bonds will sell at a **discount** to entice investors to purchase them.

[1]It is generally the case that the stated rate of interest on bonds is set in rather precise decimals (such as 6.875%). Companies usually attempt to align the stated rate as closely as possible with the market or effective rate at the time of issue.

Now look at Situation 2 in Illustration 13.3. The stated rate is still 4%, but this time the market rate is lower at 3%. How do the bonds look now? Would you want to invest in them? Of course you would, and so would many other investors. These bonds would be in high demand since the interest rate paid on the bonds is higher than the current market rate. Because these bonds are in high demand, the selling price will increase to greater than face value. The bonds will sell at a **premium**, or greater than $1,000, but at the maturity date you would be repaid only the face amount of $1,000. To summarize:

- When the stated rate is less than the market rate, bonds will sell at a discount.
- When the stated rate is greater than the market rate, bonds will sell at a premium.

Later in the chapter, we will discuss allocating, or amortizing, the discount or premium to interest expense over the term of the bonds. We can determine the actual selling price of a bond by calculating the **present value of its expected future cash flows**. The cash flows consist of:

1. Interest payments over the bond term calculated at the stated rate.
2. The principal, or face value, that will be paid at the maturity date.

The present value of these cash flows is calculated using the market rate of interest at the time the bonds are sold. Therefore, the rate of interest actually earned by the bondholders will be the market rate.

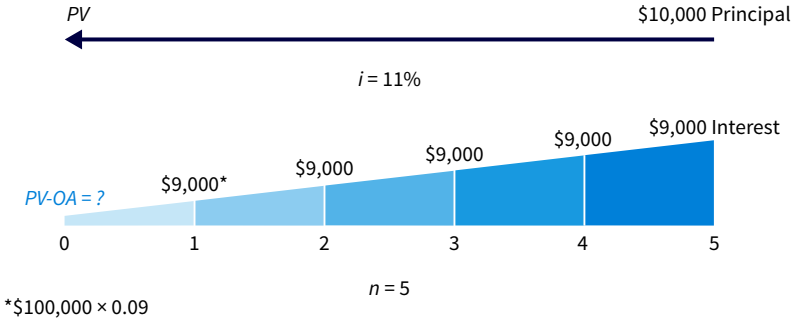
Example 13.1
Pricing of a Bond

FACTS Real-Tech, a developer of augmented reality software, issues $100,000 in bonds, due in 5 years with 9% interest payable annually at year-end. At the time of issue, the market rate for such bonds is 11%.

QUESTION What is the price of the bond? That is, what is the **present value of the bond issue?**

SOLUTION

The following time diagram depicts both the interest and the principal cash flows.



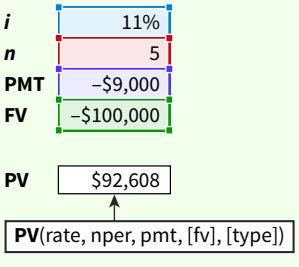
*$100,000 × 0.09

The actual principal and interest cash flows are discounted at an 11% rate for five periods, as follows.

Present value of the principal:	
$100,000 × .59345 (Table 5.2 $_{i = 11\%, n = 5}$)	$59,345.00
Present value of the interest payments:	
$9,000 × 3.69590 (Table 5.4 $_{i = 11\%, n = 5}$)	33,263.10
Present value (selling price) of the bonds	$92,608.10

By paying $92,608.10 for the bonds at the date of issue, investors actually earn an effective rate or yield of 11% over the 5-year term of the bonds because they paid less than face value. The discount on these bonds of $7,391.90 ($100,000 − $92,608.10) represents additional earnings to the investor. At the maturity date, investors are repaid the full face value of $100,000.

Excel Solution



Selling prices for corporate bonds can be found online. The price at which the bonds sell is typically stated as a **percentage** of the face or par value of the bonds. For example, the Real-Tech bonds in Example 13.1 sold for 92.6 (92.6% of par). If Real-Tech had received $102,000, then the bonds would have sold for 102 (102% of par).

Accounting Matters — What Is My Bond Worth?

When bonds are issued, they are valued at the present value of future cash flows, discounted at a market rate of interest. At the date of issuance, the carrying value of the bond is equal to the fair value. Is that always true? No, market interest rates change over time, impacting the fair value of the bond.

At any given time, investors can review corporate bonds listings online to see the coupon (interest) rate, maturity date, price and yield, as follows.

Issuer	Maturity	Amount ($ millions)	Price	Coupon	Yield
Walmart	4/22/2044	1,000	108.25	4.30	2.85
Apple	9/11/2029	1,750	108.16	2.20	1.33

The above information is for one of the bond issues of **Walmart** and **Apple**. Walmart's bond pays a coupon rate of 4.3% and yields 2.85%, while Apple pays a coupon rate of 2.20% and yields 1.33%. What does this mean? Both bonds are trading at a premium, approximately 108% of their par value. The yield reflects the effective rate of interest. With a lower yield, Apple's bonds are deemed less risky by the market than those of Walmart.

Recall that bond yields are impacted by a variety of factors, including the term of the bond, the issuers' ability to call the bond before maturity, and the relative riskiness of the issuing company, as well as by general economic factors such as market interest rates. The following table lists the relative sensitivity of bond prices to changes in interest rates for three different bond funds.

Bond Price Changes in Response to Interest Rate Changes	1% Interest Rate Increase	1% Interest Rate Decrease
Short-term fund (2–5 years)	−2.5%	+2.5%
Intermediate-term fund (5 years)	−5.0	+5.0
Long-term fund (10 years)	−10.0	+10.0

Source: The Vanguard Group.

Changes in bond value affect the issuer and investor alike, so it is important to understand the factors that impact the value over time.

Bonds Issued at Par on Interest Date

When the stated rate and market rate are equal at the time bonds are issued, no premium or discount exists. When this happens, we say the bonds are "issued at par." Also, if bonds are issued on an interest payment date, no interest is accrued. The company simply records the cash proceeds and the face value of the bonds.

Example 13.2 Entries for Bond Issued at Par

FACTS In order to fund improvements to their brewing process, GreenTea Company issues at par 10-year term bonds with a par value of $800,000, dated January 1, 2025, and bearing interest at an annual rate of 10% payable semiannually on January 1 and July 1.

QUESTION What entries does GreenTea make in 2025 related to this bond issue if the market rate of interest is 10%?

SOLUTION

GreenTea makes the following entries in 2025.

To record issuance of bonds:

January 1, 2025

Cash	800,000	
Bonds Payable		800,000

To record the first semiannual interest payment:

July 1, 2025

Interest Expense ($800,000 × .10 × 6/12)	40,000	
Cash		40,000

To record accrued interest expense:

December 31, 2025

Interest Expense	40,000	
Interest Payable		40,000

To verify the price of the bond:

Present value of the principal: \$800,000 × .37689 (Table 5.2 $_{i = 5\%, n = 20}$)	\$301,512
Present value of the interest payments: \$40,000 × 12.46221 (Table 5.4 $_{i = 5\%, n = 20}$)	498,488
Present value (selling price) of the bonds	\$800,000

Excel Solution

i	5%
n	10
PMT	–\$40,000
FV	–\$800,000
PV	\$800,000

PV(rate, nper, pmt, [fv], [type])

Bonds Issued at Discount or Premium on Interest Date

Continuing with Example 13.2, if GreenTea Company issues the \$800,000 of bonds on January 1, 2025, at 97 (meaning 97% of par), it records the following issuance.

Cash (\$800,000 × .97)	776,000	
Discount on Bonds Payable	24,000	
Bonds Payable		800,000

Notice that bonds payable is always recorded at face value, even if the bonds are issued at a discount or premium. Recall from our earlier discussion that because of its relation to interest, **companies amortize the discount and charge it to interest expense over the period of time that the bonds are outstanding**. The **straight-line method** amortizes a constant amount each interest period, in this case 20 interest periods.[2]

Example 13.3 Straight-Line Amortization—Discount

FACTS Consider the bond discount of \$24,000 on the GreenTea bonds in the above section.

QUESTION What entries does GreenTea make in 2025 to record interest expense and amortize discount on the bonds?

SOLUTION

GreenTea records the semiannual interest payments for the first year as follows.

July 1, 2025

Interest Expense	41,200	
Discount on Bonds Payable (\$24,000 ÷ 20)		1,200
Cash (\$800,000 × .10 × 6/12)		40,000

December 31, 2025

Interest Expense	41,200	
Discount on Bonds Payable (\$24,000 ÷ 20)		1,200
Interest Payable (\$800,000 × .10 × 6/12)		40,000

Discount on Bonds Payable

1/1/25	24,000		
		7/1/25	1,200
		12/31/25	1,200
12/31/25	21,600		

[2]The effective-interest method is preferred for amortization of discount or premium. To keep these initial illustrations simple, we have chosen to use the straight-line method.

In Example 13.3, at the end of the first year, 2025, the balance in the Discount on Bonds Payable account is $21,600 ($24,000 − $1,200 − $1,200). Over the term of the bonds, the balance in Discount on Bonds Payable will decrease by the same amount until it has a zero balance at the maturity date of the bonds. The GreenTea Premium on Bonds Payable is accounted for in a manner similar to that for Discount on Bonds Payable.

Example 13.4 Straight-Line Amortization—Premium

FACTS GreenTea dates and sells 10-year bonds with a par value of $800,000 on January 1, 2025, at 103.

QUESTION What entries does GreenTea make in 2025 to record issuance, interest expense, and premium amortization on the bonds?

SOLUTION

GreenTea makes the following entries for these bonds.

To record issuance of bonds priced at 103:

	January 1, 2025		
	Cash ($800,000 × 1.03)	824,000	
	Premium on Bonds Payable		24,000
	Bonds Payable		800,000

To record semiannual payment:

	July 1, 2025		
	Interest Expense	38,800	
	Premium on Bonds Payable ($24,000 ÷ 20)	1,200	
	Cash ($800,000 × .10 × 6/12)		40,000

To record accrued interest expense:

	December 31, 2025		
	Interest Expense	38,800	
	Premium on Bonds Payable ($24,000 ÷ 20)	1,200	
	Interest Payable ($800,000 × .10 × 6/12)		40,000

Premium on Bonds Payable

		1/1/25	24,000
7/1/25	1,200		
12/31/25	1,200		
		12/31/25	21,600

Amortization of a discount increases interest expense relative to cash interest. Amortization of a premium decreases interest expense relative to cash interest.

The issuer may call, or redeem, some bonds at a stated price after a certain date. This call feature gives the issuing corporation the opportunity to reduce its bonded indebtedness or take advantage of lower interest rates. **Whether callable or not, a company must amortize any premium or discount over the bond's life because early redemption (call of the bond) is not a certainty.**

Bonds Issued Between Interest Dates

Companies make bond interest payments on dates specified in the bond indenture. When companies issue bonds on dates other than the interest payment dates, **buyers of the bonds will pay the seller the interest accrued from the last interest payment date to the date of issue**. The purchasers of the bonds, in effect, pay the bond issuer in advance for that portion of the full interest payment to which they are not entitled because they have not held the bonds for that period. **Then, on the next interest payment date, purchasers will receive the full interest payment.**

Example 13.5 Bonds Issued Between Interest Dates

FACTS On March 1, 2025, GreenTea Company issues 10-year bonds at par, dated January 1, 2025, with a par value of $800,000. These bonds have an annual interest rate of 6%, payable semiannually on January 1 and July 1.

QUESTION What entries does GreenTea make in March and July 2025 to record issuance and interest expense for the bonds?

SOLUTION

Because GreenTea issues the bonds between interest dates, it records the bond issuance at **par plus accrued interest** as follows.

To record issuance of bonds:

March 1, 2025

Cash	808,000	
Bonds Payable		800,000
Interest Expense (or Payable) ($800,000 × .06 × 2/12)		8,000

To record interest expense:

July 1, 2025

Interest Expense	24,000	
Cash ($800,000 × .06 × 6/12)		24,000

As indicated, the purchaser pays in advance 2 months' interest. On July 1, 2025, 4 months after the date of purchase, GreenTea pays the purchaser 6 months' interest. After the July 1 entry, the Interest Expense account now contains a debit balance of $16,000, which represents the proper amount of interest expense—4 months at 6% on $800,000.

Interest Expense

		3/1/25	8,000
7/1/25	24,000		
Bal.	16,000		

Example 13.5 was simplified by having the January 1, 2025, bonds issued on March 1, 2025, **at par**. Let's look at an example when the bonds are issued between interest dates at either a discount or premium.

Example 13.6 Bonds Issued Between Interest Dates with Amortization

FACTS Refer to the bonds issued in Example 13.5, except now assume that the 6% bonds were issued at 102.

QUESTION What entries does GreenTea make in March and July 2025 to record issuance and interest expense for the bonds?

SOLUTION

The entries in this situation would be as follows.

To record issuance of bonds:

March 1, 2025

Cash [($800,000 × 1.02) + ($800,000 × .06 × 2/12)]	824,000	
Bonds Payable		800,000
Premium on Bonds Payable ($800,000 × .02)		16,000
Interest Expense (Payable)		8,000

To record interest expense:

July 1, 2025

Interest Expense	23,457.63	
Premium on Bonds Payable [($16,000 ÷ 118) × 4]	542.37	
Cash ($800,000 × .06 × 6/12)		24,000.00

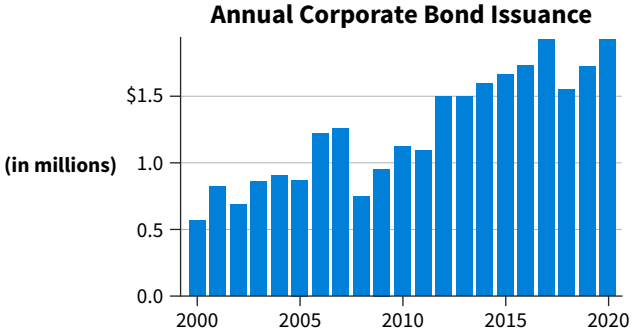
As indicated, GreenTea amortizes the premium **from the date of sale** (March 1, 2025), resulting in amortization over 118 months [(12 × 10 years) – 2 months]. Total interest expense for the first interest period is $15,457.63 ($23,457.63 − $8,000), which reflects interest for the 4 months that the bonds are outstanding.

Interest Expense

		3/1/25	8,000
7/1/25	23,457.63		
Bal.	15,457.63		

Accounting Matters — Hot, Hot, Hot

Now that you know how to account for debt issuance, do you think this is knowledge you will put to good use? Probably, if recent bond market data are any indicator. As the following chart shows, companies are issuing corporate debt at a record pace.

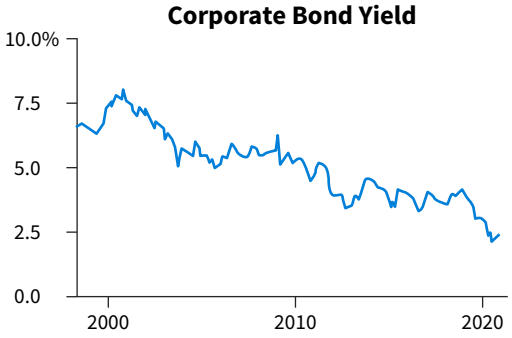


Source: Refinitiv.

Why such a hot corporate debt market? For one thing, low interest rates have fallen consistently since the financial crisis of 2008, as shown in the bond yield chart on the right. In addition, banks have cut back lending in the wake of the Covid-19 slowdown.

For some high-rated (less-risky) companies, it can be riskier to borrow from a bank than the bond markets. The reason? High-rated companies tend to rely on short-term commercial paper, backed by undrawn loans, to fund working capital but are left stranded when these markets freeze up.

As a result, many companies are now financing with longer-term bonds instead. In fact, nonfinancial companies, such as **Boeing**, **Apple**, **Nike**, and **Carnival Cruise Line**, all used the hot bond market to increase long-term borrowings, lock in low interest rates, and take advantage of investor demand. In some cases, they are redeeming previously issued debt, which had higher interest rates, thereby reducing the net cost of borrowing.



Source: Moody's.

The hot bond market is also humming along for lower-quality (higher-risk) companies. With such low investment-grade bond yields, riskier company debt with higher yields might be attractive to investors "chasing yields." The concern here is that some companies are racking up debt even as earnings remain depressed. Many companies hardest hit by the Covid-19 pandemic have been pushed to secure bond deals against their assets. That may spell trouble down the road. Hopefully, the hot bond market will work out for both the investor and the company in the long run.

Effective-Interest Method

Global View

IFRS requires the use of the effective-interest method. GAAP permits the use of the straight-line method if not materially different than the effective-interest method. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

The preferred procedure for amortization of a discount or premium is the **effective-interest method** (also called **present value amortization**) (see **Global View**). You were first introduced to this method in Chapter 6 when accounting for notes receivable. Under the effective-interest method, companies:

1. Compute bond interest expense by multiplying the **carrying value** of the bonds at the beginning of the period by the effective-interest rate. The carrying value (or book value or amortized cost) is the face amount minus any unamortized discount **or** plus any unamortized premium.

2. Determine the bond discount or premium amortization next by comparing the bond interest expense with the interest (cash) to be paid.

Illustration 13.4 depicts the computation of the amortization.

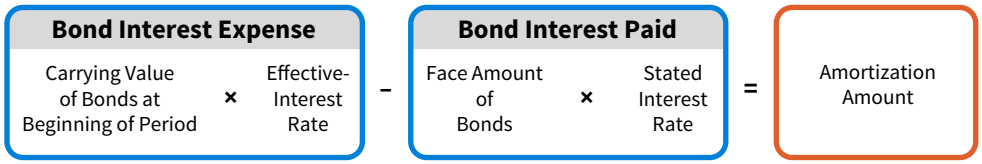


ILLUSTRATION 13.4 Bond Discount and Premium Amortization Computation

The effective-interest method produces a periodic interest expense equal to **a constant percentage of the carrying value of the bonds**. Since the percentage is the effective rate of interest incurred by the borrower at the time of issuance, the effective-interest method provides a move relevant measure of interest expense than the straight-line method. Both the effective-interest and straight-line methods result in the **same total amount of interest expense over the term of the bonds**. However, when the annual amounts are materially different, GAAP requires use of the effective-interest method. [1] (See the FASB Codification References near the end of the chapter.)

In addition, the issuance of bonds involves engraving and printing costs, legal and accounting fees, commissions, promotion costs, and other similar charges. These costs should be recorded as a reduction to the carrying value of the bond payable and then amortized into expense over the life of the bond through an adjustment to the effective-interest rate. [2] For example, if the face value of the bond is $100,000 and issue costs are $1,000, then the bond payable (net of the bond issue costs) is recorded at $99,000. Thus, the effective-interest rate will be higher, based on the reduced carrying value. *For all homework, assume issue costs are part of bond issue proceeds, unless otherwise indicated.*

Bonds Issued at a Discount

The pricing of a bond issued at a discount is presented in Example 13.7

Example 13.7
Pricing of Bonds Issued at a Discount

FACTS Evermaster Corporation issued $100,000 of 8% term bonds on January 1, 2025, due on January 1, 2030, with interest payable each July 1 and January 1. Investors require an effective-interest rate of 10%.

QUESTION What amount will investors pay for the Evermaster bonds, and what amount of discount will Evermaster record when the bonds are issued?

SOLUTION

Evermaster computes the price of the bonds at $92,278 and the discount of $7,722 as shown in the following calculation.

Maturity value of bonds payable		$100,000
Present value of $100,000 due in 5 years at 10%, interest payable semiannually (Table 5.2 $_{i=5\%,\,n=10}$; $100,000 × .61391)	$61,391	
Present value of $4,000 interest payable semiannually for 5 years at 10% annually (Table 5.4 $_{i=5\%,\,n=10}$; $4,000 × 7.72173)	30,887	
Proceeds from sale of bonds		92,278
Discount on bonds payable		$ 7,722

Because the investors required an effective-interest rate of 10%, investors paid $92,278 for the $100,000 of bonds, creating a $7,722 discount. *Note:* The semiannual interest payment is fixed at $4,000 ($100,000 × .08 × 6/12). Remember, since interest payments are made semiannually, you must adjust the effective-interest rate and the number of periods to calculate the present value.

Excel Solution

i	5%
n	10
PMT	–$4,000
FV	–$100,000
PV	$92,278

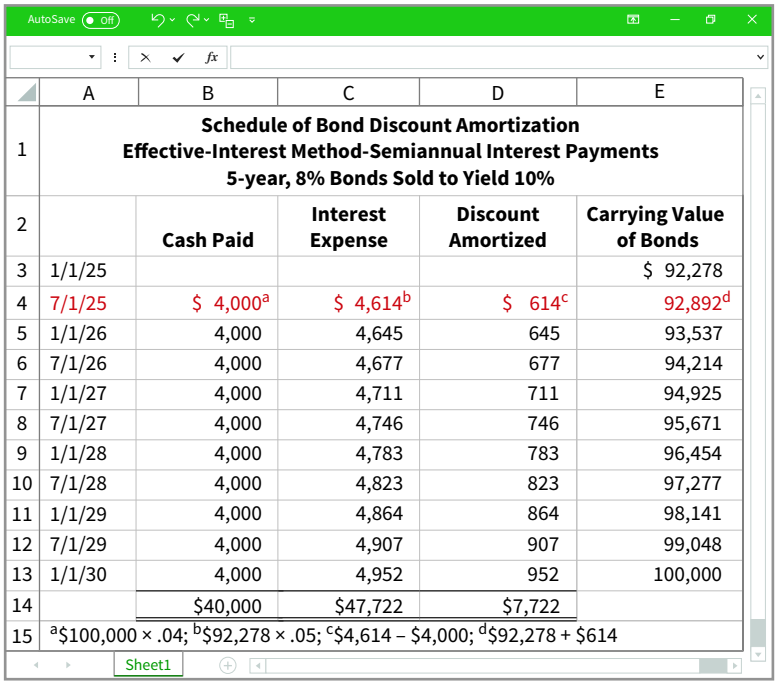
PV(rate, nper, pmt, [fv], [type])

The five-year amortization schedule for Example 13.7 is shown in **Illustration 13.5**.

ILLUSTRATION 13.5 Bond Discount Amortization Schedule

Discount on Bonds Payable

1/1/25	7,722		
		7/1/25	614
7/1/25	7,108		
		12/31/25	645
12/31/25	6,463		
	≈		
		12/31/30	952
12/31/30	0		



	A	B	C	D	E
1	**Schedule of Bond Discount Amortization Effective-Interest Method-Semiannual Interest Payments 5-year, 8% Bonds Sold to Yield 10%**				
2		**Cash Paid**	**Interest Expense**	**Discount Amortized**	**Carrying Value of Bonds**
3	1/1/25				$ 92,278
4	7/1/25	$ 4,000[a]	$ 4,614[b]	$ 614[c]	92,892[d]
5	1/1/26	4,000	4,645	645	93,537
6	7/1/26	4,000	4,677	677	94,214
7	1/1/27	4,000	4,711	711	94,925
8	7/1/27	4,000	4,746	746	95,671
9	1/1/28	4,000	4,783	783	96,454
10	7/1/28	4,000	4,823	823	97,277
11	1/1/29	4,000	4,864	864	98,141
12	7/1/29	4,000	4,907	907	99,048
13	1/1/30	4,000	4,952	952	100,000
14		$40,000	$47,722	$7,722	
15	[a]$100,000 × .04; [b]$92,278 × .05; [c]$4,614 – $4,000; [d]$92,278 + $614				

In Illustration 13.5, total interest at the end of the bond term is greater than cash interest paid. This will always be the case when bonds are issued at a discount. Now let's look at the journal entries for Evermaster.

Example 13.8 Entries for Effective-Interest Amortization—Discount

FACTS Refer to the amortization schedule for the bonds in Illustration 13.5.

QUESTION What entries are recorded in 2025 for the Evermaster bonds?

SOLUTION

Evermaster makes the following entries for the bonds issued at a discount.

Issuance of bonds at discount:

January 1, 2025

Cash	92,278	
Discount on Bonds Payable	7,722	
Bonds Payable		100,000

First interest payment and amortization of discount:

July 1, 2025

Interest Expense	4,614	
Discount on Bonds Payable		614
Cash		4,000

Interest expense accrued at year-end and amortization of discount:

December 31, 2025

Interest Expense	4,645	
Discount on Bonds Payable		645
Interest Payable		4,000

As you can see from Example 13.8, the balance of discount on bonds payable will **decrease** over the term of the bonds and will be fully amortized at the end of the bond term. A bond discount means the company borrowed less ($92,278) than the face amount of the bond, but it has to pay back the full-face value ($100,000). Therefore, the company's actual (effective) interest rate, 10%, is higher than the stated rate of 8%.

Although it carries a debit balance, Discount on Bonds Payable is **not an asset**. It does not provide any future economic benefit. Conceptually, Discount on Bonds Payable is a liability valuation account, or a **contra account**.[3] It reduces the face amount of the related liability on the balance sheet so that the bonds are reported at their carrying value on the balance sheet. On December 31, 2025, Evermaster would report the bonds on its balance sheet as shown in Illustration 13.6.

Evermaster Corporation
Balance Sheet
December 31, 2025

Current liabilities		
Interest payable (to be paid on 1/1/26)		$ 4,000
Long-term liabilities		
Bonds payable	$100,000	
Discount on bonds payable	(6,463)	93,537

ILLUSTRATION 13.6 Balance Sheet Presentation of Bonds Issued at a Discount

In Illustration 13.6, the December 31, 2025, carrying value on the balance sheet ($93,537) matches the carrying value in the amortization table for 1/1/26 in Illustration 13.5. These values should match since two interest payment periods have occurred and been recorded by Evermaster.

Bonds Issued at a Premium

Now assume that for the previous bond issue by Evermaster Corporation, investors are willing to accept an effective-interest rate of 6%. In that case, they would pay $108,530 or a premium of $8,530, computed as shown in Illustration 13.7.

Maturity value of bonds payable		$100,000
Present value of $100,000 due in 5 years at 6%, interest payable semiannually (Table 5.2 $_{i=3\%, n=10}$); ($100,000 × .74409)	$74,409	
Present value of $4,000 interest payable semiannually for 5 years at 6% annually (Table 5.4 $_{i=3\%, n=10}$); ($4,000 × 8.53020)	34,121	
Less: Proceeds from sale of bonds		108,530
Premium on bonds payable		$ 8,530

ILLUSTRATION 13.7 Computation of Premium on Bonds Payable

Excel Solution

i	3%
n	10
PMT	−$4,000
FV	−$100,000
PV	$108,530

PV(rate, nper, pmt, [fv], [type])

The five-year amortization schedule is shown in Illustration 13.8.

[3]"Elements of Financial Statements of Business Enterprises," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: FASB, 1980).

ILLUSTRATION 13.8 Bond Premium Amortization Schedule

Premium on Bonds Payable

		1/1/25	8,530
7/1/25	744		
		7/1/25	7,786
12/31/25	766		
		12/31/25	7,020
≈			
12/31/30	971		
		12/31/30	0

AutoSave Off

	A	B	C	D	E
1	**Schedule of Bond Premium Amortization Effective-Interest Method-Semiannual Interest Payments 5-year, 8% Bonds Sold to Yield 6%**				
2		**Cash Paid**	**Interest Expense**	**Discount Amortized**	**Carrying Value of Bonds**
3	1/1/25				$108,530
4	7/1/25	$ 4,000[a]	$ 3,256[b]	$ 744[c]	107,786[d]
5	1/1/26	4,000	3,234	766	107,020
6	7/1/26	4,000	3,211	789	106,231
7	1/1/27	4,000	3,187	813	105,418
8	7/1/27	4,000	3,162	838	104,580
9	1/1/28	4,000	3,137	863	103,717
10	7/1/28	4,000	3,112	888	102,829
11	1/1/29	4,000	3,085	915	101,914
12	7/1/29	4,000	3,057	943	100,971
13	1/1/30	4,000	3,029	971	100,000
14		$40,000	$31,470	$8,530	
15	[a]$100,000 × .04; [b]$108,530 × .03; [c]$4,000 − 3,256%; [d]$92,278 + $614				

Sheet1

Evermaster records the following entries for the bonds in 2025.

Issuance of bonds at premium:

January 1, 2025

Cash	108,530	
Premium on Bonds Payable		8,530
Bonds Payable		100,000

First interest payment and amortization of premium:

July 1, 2025

Interest Expense	3,256	
Premium on Bonds Payable	744	
Cash		4,000

Interest expense accrued at year-end and amortization of premium:

December 31, 2025

Interest Expense	3,234	
Premium on Bonds Payable	766	
Interest Payable		4,000

As indicated, the balance of premium on bonds payable will **decrease** over the term of the bonds and will be fully amortized at the end of the bond term. A bond premium means the company borrowed more ($108,530) than the face amount of the bond, but it only has to pay back the face value ($100,000). Therefore, the company's actual (effective) interest rate, 6%, is lower than the stated rate of 8%.

Conceptually, Premium on Bonds Payable is also a liability valuation account. However, it is referred to as an **adjunct account** because it increases the face amount of the related liability so the bonds are reported at their carrying value on the balance sheet. On

December 31, 2025, Evermaster would report the bonds on its balance sheet as shown in **Illustration 13.9**.

ILLUSTRATION 13.9 Balance Sheet Presentation of Bonds Issued at a Premium

Evermaster Corporation
Balance Sheet
December 31, 2025

Current liabilities		
Interest payable (to be paid on 1/1/26)		$ 4,000
Long-term liabilities		
Bonds payable	$100,000	
Premium on bonds payable	7,020	107,020

In Illustration 13.9, notice the December 31, 2025, carrying value on the balance sheet ($107,020) matches the carrying value in the amortization table for 1/1/26 in Illustration 13.8. These values should match since two interest payment periods have occurred and been recorded by Evermaster.

Accruing Interest

In our previous examples, the interest payment dates and the date the financial statements were issued were essentially the same. For example, when Evermaster sold bonds at a premium, the two interest payment dates coincided with the financial reporting dates. However, what happens if Evermaster wishes to report financial statements at the end of February 2025? In this case, the company **prorates** the premium by the appropriate number of months, to arrive at the proper interest expense, as shown in **Illustration 13.10**.

ILLUSTRATION 13.10 Computation of Interest Expense

Interest accrual ($4,000 × 2/6)	$1,333.33
Premium amortized ($744 × 2/6)	(248.00)
Interest Expense (Jan.–Feb.)	$1,085.33

Evermaster records this accrual as follows.

Interest Expense	1,085.33	
Premium on Bonds Payable	248.00	
Interest Payable		1,333.33

If the company prepares financial statements six months later, it follows the same procedure. That is, the premium amortized would be as shown in **Illustration 13.11**.

ILLUSTRATION 13.11 Computation of Premium Amortization

Premium amortized (March–June) ($744 × 4/6)	$496.00
Premium amortized (July–August) ($766 × 2/6)	255.33
Premium amortized (March–August)	$751.33

The interest-accrual computation is much simpler if the company uses the straight-line method. For example, the total premium is $8,530, which Evermaster allocates

evenly over the five-year period. Thus, premium amortization per month is $142.17 ($8,530 ÷ 60 months).

Put It into Practice LO 13.1

Record Bond Issue and Interest Payments

FACTS On January 1, 2025, Peloton Company sold 12% bonds having a maturity value of $500,000 for $537,907.40. The market rate of interest at the time of issuance is 10%. The bonds are dated January 1, 2025, and mature January 1, 2030, with interest payable December 31 of each year. Peloton Company allocates interest and unamortized discount or premium on the effective-interest basis.

INSTRUCTIONS

(Round answers to the nearest cent.)

a. Verify the price for the bonds and prepare the journal entry at the date of the bond issuance.

b. Prepare a schedule of interest expense and bond amortization for 2025–2027.

c. Prepare the journal entry to record the interest payment and the amortization for 2025.

d. Prepare the journal entry to record the interest payment and the amortization for 2027.

SOLUTION

a.

$500,000 × .62092 (Table 5.2 $_{i = 10\%, n = 5}$)	$310,460.00
($500,000 × 12%) × 3.79079 (Table 5.4 $_{i = 10\%, n = 5}$)	227,447.40
Price of bonds	$537,907.40

January 1, 2025

Cash	537,907.40	
Premium on Bonds Payable		37,907.40
Bonds Payable		500,000.00

b.

Schedule of Interest Expense and Bond Premium Amortization
Effective-Interest Method 12% Bonds Sold to Yield 10%

Date	Cash Paid (12%)	Interest Expense (10%)	Premium Amortized	Carrying Value of Bonds
	(1)	(2)	(1) – (2)	
1/1/25	–	–		$537,907.40
12/31/25	$60,000.00*	$53,790.74	$6,209.26	531,698.14
12/31/26	60,000.00	53,169.81	6,830.19	524,867.95
12/31/27	60,000.00	52,486.79	7,513.21	517,354.74

*$500,000 × .12

c. (see schedule in part (b))

December 31, 2025

Interest Expense	53,790.74	
Premium on Bonds Payable	6,209.26	
Cash		60,000.00

d. (see schedule in part (b))

December 31, 2027

Interest Expense	52,486.79	
Premium on Bonds Payable	7,513.21	
Cash		60,000.00

13.2 Extinguishment of Debt

LEARNING OBJECTIVE 2

Describe the accounting for the extinguishment of debt.

How do companies record the payment of debt—often referred to as **extinguishment of debt**? If the bonds (or any other form of debt security) are outstanding to maturity, the answer is straightforward. The issuing company:

- Does not compute any gains or losses.
- Will have fully amortized any premium or discount at the date the bonds mature.

As a result, the carrying value will equal the maturity (face) value of the bond. As the maturity value will also equal the bond's face value at that time, no gain or loss exists.

In some cases, a company extinguishes debt **before** its maturity date.[4] The amount paid on extinguishment before maturity is called the **reacquisition price**. The difference between the reacquisition price and the carrying value of the bonds on the date of reacquisition will trigger a gain or loss from extinguishment, as follows.

Reacquisition Price < Carrying Value = Gain on Extinguishment
Reacquisition Price > Carrying Value = Loss on Extinguishment

At the time of reacquisition, **the unamortized premium or discount must be amortized up to the reacquisition date**.

Example 13.9 Debt Extinguishment

FACTS On January 1, 2018, General Bell Corp. issued at 95, bonds with a par value of $800,000, due in 20 years. Eight years after the issue date, General Bell calls the entire issue at 101 and extinguishes it.[5] At that time, the unamortized discount balance (based on straight-line amortization) is $24,000.

QUESTION What entry does General Bell make to record the extinguishment (redemption) of the bonds?

SOLUTION

The loss on redemption is computed as follows.

Reacquisition price ($800,000 × 1.01)		$808,000
Net carrying amount of bonds redeemed:		
Face value	$800,000	
Less: Unamortized discount ($40,000* × 12/20)	24,000	776,000
Loss on redemption		$ 32,000

*[$800,000 × (1 − .95)]

[4]Some companies have attempted to extinguish debt through an in-substance defeasance. **In-substance defeasance** is an arrangement whereby a company provides for the future repayment of a long-term debt issue by placing purchased securities in an irrevocable trust. The company pledges the principal and interest of the securities in the trust to pay off the principal and interest of its own debt securities as they mature. However, it is not legally released from its primary obligation for the debt that is still outstanding. This practice is not considered an extinguishment of debt, and therefore the company does not record a gain or loss.

[5]The issuer of callable bonds must generally exercise the call on an interest date. Therefore, the amortization of any discount or premium will be up-to-date, and there will be no accrued interest. If the purchase is not made on an interest date, the discount or premium must be amortized, and the interest payable must be accrued from the last interest date to the date of purchase.

General Bell records the extinguishment of the bonds as follows.

Bonds Payable	800,000	
Loss on Redemption of Bonds	32,000	
Discount on Bonds Payable		24,000
Cash		808,000

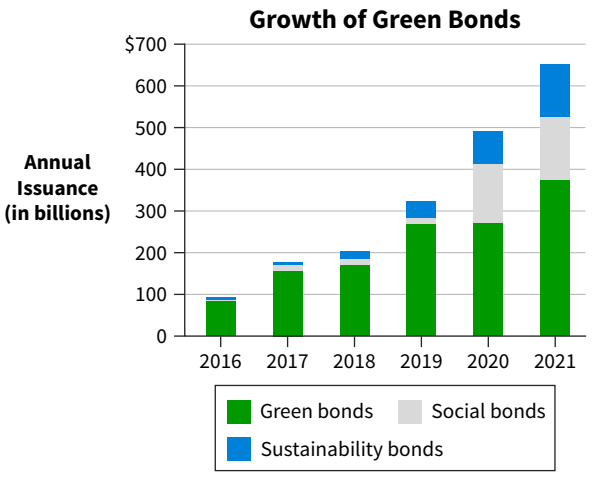
Note that it is often advantageous for the issuer to extinguish the **entire** outstanding bond issue and replace it with a new bond issue bearing a lower rate of interest. Companies like **Apple** and **The Walt Disney Company** took advantage of low interest rates recently to refinance some of their outstanding debt. The replacement of an existing issuance with a new one is called **refunding**. Whether the early extinguishment of bonds is a nonrefunding or a refunding situation, a company should report the difference (gain or loss) in the income statement of the period of redemption.

Accounting Matters

Are All Bonds Created Equal?

Investor demand for different types of bonds will change over time. However one thing is for certain: if there is demand, bond issuers will get creative to meet it! Would you believe that several governments, and even companies like **The Walt Disney Company** and **The Coca-Cola Company**, have issued 100-year bonds? Investors, like pension funds with significant long-term obligations, scooped up these long-term bonds to bolster their long-term investment assets.

Another trend in bond issuance is that of environmental, social, governance (ESG) bonds, sometime referred to as green bonds. Broadly defined, green bonds are used to fund projects that have a positive environmental or climate impact. As shown in the adjacent chart, the issuance of green bonds reached record levels in 2020 and shows no sign of slowing down. **Anheuser-Busch InBev SA** recently signed a first-of-its-kind $10.1 billion debt facility that will allow it to lower the interest rate if it meets certain sustainability targets, such as increasing recycled content in packaging, cutting carbon emissions, and improving water efficiencies in its breweries.



Sources: Moody's Investors Service; Climate Bonds Initiative; and Dealogic.

Sources: Albert Phung, "Why Do Companies Issue 100-Year Bonds?" *Investopedia* (February 2009); and "Sustainable Bonds Insight 2021," *Environmental Finance* (February 22, 2021).

Put It into Practice LO 13.2

Record Debt Extinguishment

FACTS J.J. Watt, Inc. had outstanding $6,000,000 of 11% bonds (interest payable July 31 and January 31) due in 10 years. Since issuance, market interest rates have declined, and Watt wants to reissue the debt at these lower rates. On July 1, it issued $9,000,000 of 10%, 15-year bonds (interest payable July 1 and January 1) at 98. A portion of the proceeds was used to call the 11% bonds (with unamortized discount of $120,000) at 102 on August 1.

INSTRUCTIONS

Prepare the journal entries necessary to record issuance of the new 10% bonds and the refunding of the 11% bonds.

SOLUTION

To record issuance of 10% bonds:

July 1

Cash ($9,000,000 × .98)	8,820,000	
Discount on Bonds Payable (.02 × $9,000,000)	180,000	
Bonds Payable		9,000,000

To record retirement of 11% bonds:

August 1

Bonds Payable	6,000,000	
Loss on Redemption of Bonds	240,000*	
Cash ($6,000,000 × 1.02)		6,120,000
Discount on Bonds Payable		120,000

*Reacquisition price		$6,120,000
Less: Net carrying amount of bonds redeemed		
Face value	$6,000,000	
Less: Unamortized bond discount	120,000	5,880,000
Loss on redemption		$ 240,000

13.3 Long-Term Notes Payable

LEARNING OBJECTIVE 3

Explain the accounting for long-term notes payable.

The difference between current notes payable and **long-term notes payable** is the maturity date. As discussed in Chapter 12, short-term notes payable are those that companies expect to pay within a year or the operating cycle, whichever is longer. Long-term notes are similar in substance to bonds in that both have fixed maturity dates and carry either a stated or implicit interest rate. However, as discussed earlier, notes do not trade as readily as bonds in the organized public securities markets. Noncorporate and small corporate enterprises issue notes as their long-term instruments. Larger corporations issue both long-term notes and bonds.

Accounting for notes and bonds is quite similar.

- Like a bond, a note is valued at the present value of its future interest and principal cash flows.
- The company amortizes any discount or premium over the life of the note, just as it would the discount or premium on a bond.[6]
- Companies compute the present value of an interest-bearing note, record its issuance, and amortize any discount or premium and accrual of interest in the same way that they do for bonds (as shown earlier in this chapter).

[6]All payables that represent commitments to pay money at a determinable future date are subject to present value measurement techniques, except for the following specifically excluded types:

1. Normal accounts payable due within one year.
2. Security deposits, retainages, advances, or progress payments.
3. Transactions between parent and subsidiary.
4. Obligations payable at some indeterminable future date. [3]

As you might expect, accounting for long-term notes payable parallels accounting for long-term notes receivable as was presented in Chapter 6.

Notes Issued at Face Value

In Chapter 6, we discussed the recognition of a $10,000, three-year note Scandinavian Imports issued at face value to Fjords Unlimited. In this transaction, the stated rate and the effective rate were both 10%. The time diagram and present value computation in Chapter 6 (see Illustration 6.11) for Fjords Unlimited are the same for the issuer of the note, Scandinavian Imports, in recognizing a note payable. Because the present value of the note and its face value are the same, $10,000, Scandinavian recognizes no premium or discount. It records the issuance of the note as follows.

Cash	10,000	
Notes Payable		10,000

Scandinavian Imports recognizes the interest incurred each year as follows.

Interest Expense ($10,000 × .10)	1,000	
Cash		1,000

Notes Not Issued at Face Value

Zero-Interest-Bearing Notes

If a company issues a zero-interest-bearing (non-interest-bearing) note solely for cash, it measures the note's present value by the cash received.[7] The implicit interest rate is the **rate that equates the cash received with the amounts to be paid in the future**. The issuing company records the difference between the face amount and the present value (cash received) as **a discount and amortizes that amount to interest expense over the life of the note**.

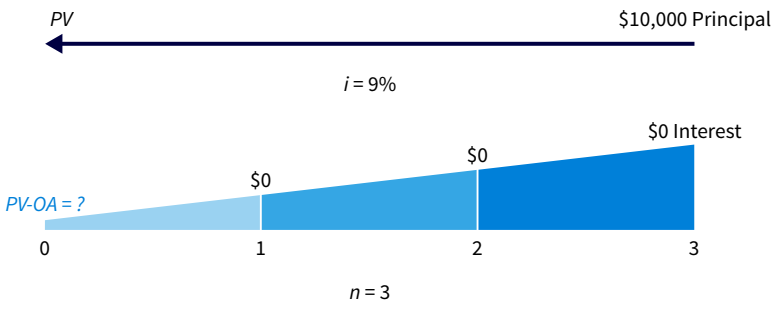
Example 13.10 Zero-Interest-Bearing Note

FACTS Turtle Cove Company issued the 3-year, $10,000, zero-interest-bearing note to Jeremiah Company illustrated in Chapter 6 (notes receivable). The implicit rate that equated the total cash to be paid ($10,000 at maturity) to the present value of the future cash flows ($7,721.80 cash proceeds at date of issuance) was 9%. (The present value of $1 for 3 periods at 9% is .77218.)

QUESTION What is the time diagram and entry to record issuance of the note?

SOLUTION

The time diagram for this note with a single cash flow is as follows.



Excel Solution

i	9%
n	3
PMT	$0
FV	−$10,000
PV	$7,721.80

PV(rate, nper, pmt, [fv], [type])

[7] Although we use the term "note" throughout this discussion, the basic principles and methodology apply equally to other long-term debt instruments.

Turtle Cove records issuance of the note as follows.

Cash	7,721.80	
Discount on Notes Payable	2,278.20	
Notes Payable		10,000.00

Turtle Cove will amortize the discount and recognize interest expense annually using the **effective-interest method** as shown in Example 13.11.

Example 13.11 Entries for Zero-Interest-Bearing Note

FACTS Refer to the zero-interest bearing note issued by Turtle Cove in Example 13.10.

QUESTIONS (a) What is the 3-year amortization schedule, using effective-interest amortization? (b) What is the entry to record interest expense for the first year of the note?

SOLUTION

a. The 3-year discount amortization and interest expense schedule is as follows (This schedule is similar to the note receivable schedule of Jeremiah Company in Illustration 6.10.)

	A	B	C	D	E
1	**Schedule of Note Discount Amortization Effective-Interest Method 0% Note Discounted at 9%**				
2		**Cash Interest Paid**	**Interest Expense**	**Discount Amortized**	**Carrying Value of Note**
3	Date of issue				$ 7,721.80
4	End of year 1	$-0-	$ 694.96[a]	$ 694.96[b]	8,416.76[c]
5	End of year 2	-0-	757.51	757.51	9,174.27
6	End of year 3	-0-	825.73[d]	825.73	10,000.00
7		$-0-	$2,278.20	$2,278.20	
8	[a]$7,721.80 × .09; [b]$694.96 – $0; [c]$7,721.80 + $694.96; [d]$ .05 adjustment to compensate for rounding				

Discount on Notes Payable

Beg. bal.	2,278.20	Yr 1	694.96
		Yr 2	757.51
		Yr 3	825.73
	0		

b. Turtle Cove records interest expense at the end of the first year using the effective-interest method as follows.

Interest Expense ($7,721.80 × .09)	694.96	
Discount on Notes Payable		694.96

The total amount of the discount, $2,278.20 in Example 13.11 represents the interest expense that Turtle Cove will incur on the note over the 3 years. At the end of year 1, the note payable would be reported on the balance sheet at its carrying value of $8,416.76. Similar to what we saw on the interest revenue side of this transaction in Chapter 6, the interest expense reported by Turtle Cove increases each year as the carrying value of the note increases.

Interest-Bearing Notes

The zero-interest-bearing note above is an example of the extreme difference between the stated rate and the effective rate. In many cases, the difference between these rates is not so great. Let's look at an example of an interest-bearing note payable.

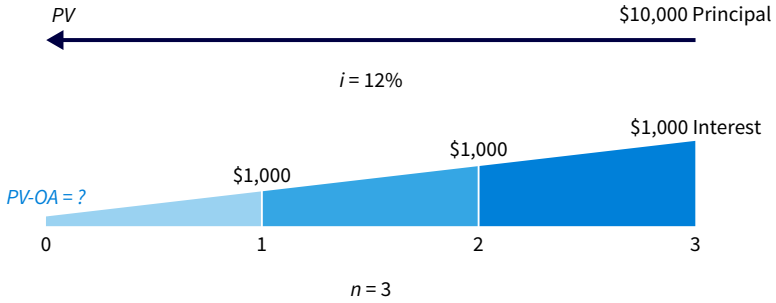
Example 13.12
Interest-Bearing Note

FACTS Marie Co. issued for cash a $10,000, three year note bearing interest at 10% to Morgan Corp. (This is the same note example presented in Chapter 6.) The market rate of interest for a note of similar risk is 12%.

QUESTION What is the time diagram and entry to record issuance of the note?

SOLUTION

The time diagram for this note is as follows.



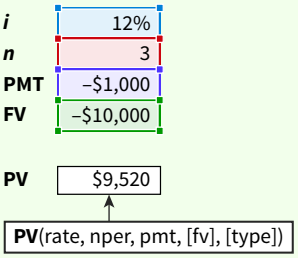
The present value of the note is computed as follows.

Present value of the principal [$10,000 × .71178 (Table 5.2 $_{i=12\%, n=3}$)]	$7,118
Present value of the interest [$1,000 × 2.40183 (Table 5.4 $_{i=12\%, n=3}$)]	2,402
Present value of the note	$9,520

In this case, because the effective rate of interest (12%) is greater than the stated rate (10%), the present value of the note ($9,520) is less than the face value ($10,000). That is, the note is exchanged at a **discount**. Marie Co. records the issuance of the note as follows.

Cash	9,520	
Discount on Notes Payable	480	
Notes Payable		10,000

Excel Solution



Marie Co. then amortizes the discount and recognizes interest expense annually using the **effective-interest method**.

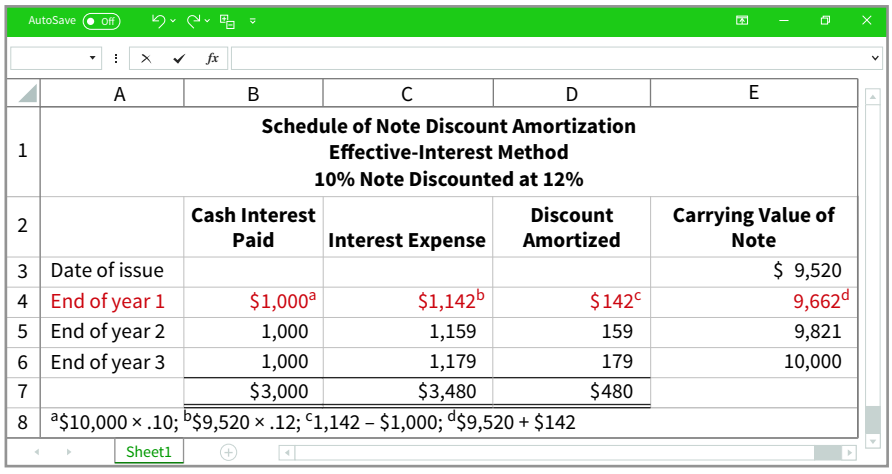
Example 13.13
Entries for Interest-Bearing Note

FACTS Refer to the interest-bearing note issued by Marie Co. in Example 13.12.

QUESTIONS (a) What is the 3-year the amortization schedule, using effective-interest amortization? (b) What is the entry to record interest expense for the first year of the note?

SOLUTION

a. The 3-year discount amortization and interest expense schedule is as follows.



	A	B	C	D	E
1	**Schedule of Note Discount Amortization Effective-Interest Method 10% Note Discounted at 12%**				
2		**Cash Interest Paid**	**Interest Expense**	**Discount Amortized**	**Carrying Value of Note**
3	Date of issue				$ 9,520
4	End of year 1	$1,000[a]	$1,142[b]	$142[c]	9,662[d]
5	End of year 2	1,000	1,159	159	9,821
6	End of year 3	1,000	1,179	179	10,000
7		$3,000	$3,480	$480	
8	[a]$10,000 × .10; [b]$9,520 × .12; [c]1,142 – $1,000; [d]$9,520 + $142				

Discount on Notes Receivable

Beg. bal.	480	Yr 1	142
		Yr 2	159
		Yr 3	179
	0		

b. Marie Co. records payment of the annual interest and amortization of the discount for the first year as follows (amounts per amortization schedule).

Interest Expense	1,142	
Discount on Notes Payable		142
Cash		1,000

The total amount of the discount, $480 in this case, will be amortized over the 3 years. At the end of year 1, the note payable would be reported on the balance sheet at its carrying value of $9,662.

As shown in Example 13.13, when the present value is less than the face value, a company exchanges the note at a discount. It does so by recording the discount as a debit and amortizing it using the effective-interest method over the life of the note as annual increases in the amount of interest expense recognized.

Special Notes Payable Situations

Notes Issued for Property, Goods, or Services

Sometimes, companies may receive property, goods, or services in exchange for a note payable. When exchanging the debt instrument for property, goods, or services in a bargained transaction entered into at arm's length, the stated interest rate is presumed to be fair unless any of the following occur.

1. No interest rate is stated.
2. The stated interest rate is unreasonable.
3. The stated face amount of the debt instrument is materially different from the current cash sales price for the same or similar items or from the current fair value of the debt instrument.

In these circumstances, the company measures the present value of the debt instrument by the fair value of the property, goods, or services or by an amount that reasonably approximates the fair value of the note. [4] If there is **no stated rate of interest**, **the amount of interest is the difference between the face amount of the note and the fair value of the property**.

Example 13.14
Note Issued for Goods or Services

FACTS Scenic Development Company sells land having a cash sale price of $200,000 to Health Spa, Inc. In exchange for the land, Health Spa gives a 5-year, $293,866, zero-interest-bearing note. The $200,000 cash sale price represents the present value of the $293,866 note discounted at 8% for 5 years.

QUESTIONS (a) Should both parties record the transaction on the sale date at the face amount of the note, which is $293,866? Explain. (b) What entries do Health Spa and Scenic Development make at the exchange date?

SOLUTION

a. No. If they did, Health Spa's Land account and Scenic's sales would be overstated by $93,866 (the interest for 5 years at an effective rate of 8%). Similarly, interest revenue to Scenic and interest expense to Health Spa for the 5-year period would be understated by $93,866.

b. Given that the difference between the cash sale price of $200,000 and the $293,866 face amount of the note represents interest at an effective rate of 8%, the transaction is recorded as follows.

Health Spa, Inc. (Buyer)		
Land	200,000	
Discount on Notes Payable	93,866	
Notes Payable		293,866

Scenic Development Company (Seller)		
Notes Receivable	293,866	
Discount on Notes Receivable		93,866
Sales Revenue		200,000

In Example 13.14, Health Spa amortizes annually a portion of the discount of $93,866 as a charge to interest expense during the five-year life of the note. Scenic Development records interest revenue totaling $93,866 over the five-year period by also amortizing the discount. The effective-interest method is typically used.

Choice of Interest Rate

In note transactions, the effective or market interest rate is either evident or determinable by other factors involved in the exchange, such as the fair value of what is given or received. But, if a company cannot determine the fair value of the property, goods, services, or other rights, and if the note has no ready market, the problem of determining the present value of the note is more difficult.

- To estimate the present value of a note under such circumstances, a company must approximate an applicable interest rate that may differ from the stated interest rate.
- This process of interest-rate approximation is called **imputation**, and the resulting interest rate is called an **imputed interest rate**.

The prevailing rates for similar instruments of issuers with similar credit ratings affect the choice of a rate. Other factors, such as restrictive covenants, collateral, payment schedule, and the existing prime interest rate, also play a part. Companies determine the imputed interest rate when they issue a note. Any subsequent changes in prevailing interest rates are ignored.

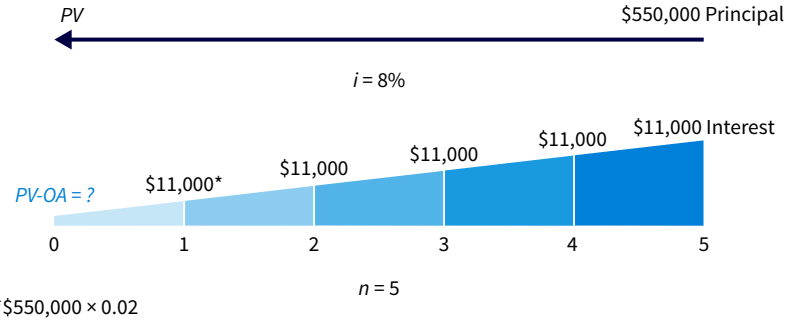
Example 13.15 Imputed Value of a Note

FACTS On December 31, 2025, Wunderlich Company issued a promissory note to Brown Interiors Company for architectural services related to its building. The note has a face value of $550,000, a due date of December 31, 2030, and bears a stated interest rate of 2%, payable at the end of each year. Interest paid each period is therefore $11,000 ($550,000 × .02). Wunderlich cannot readily determine the fair value of the architectural services, nor is the note readily marketable. On the basis of Wunderlich's credit rating, the absence of collateral, the prime interest rate at that date, and the prevailing interest on Wunderlich's other outstanding debt, the company imputes an 8% interest rate in this situation.

QUESTION What is the present value of the note and the imputed fair values of the services received by Wunderlich?

SOLUTION

The time diagram depicting both cash flows is as follows.



*$550,000 × 0.02

The present value of the note and the imputed fair value of the architectural services are determined as follows.

Face value of the note		$550,000
Present value of $550,000 due in 5 years at 8% interest payable annually (Table 5.2 $_{i = 8\%, n = 5}$); ($550,000 × .68058)	$374,319	
Present value of $11,000 interest payable annually for 5 years at 8%; (Table 5.4 $_{i = 8\%, n = 5}$); ($11,000 × 3.99271)	43,920	
Present value of the note		(418,239)
Discount on notes payable		$131,761

The accounting for the Wunderlich note is presented in Example 13.16.

Example 13.16 Entries and Amortization for Note Exchanged for Services

FACTS Refer to the note exchanged for services in Example 13.15.

QUESTIONS (a) What is the entry to record the issuance of the note? (b) What is the amortization schedule for the note and the entry required for the note in 2026?

SOLUTION

a. Wunderlich records issuance of the note in payment for the architectural services as follows.

December 31, 2025

Buildings	418,239	
Discount on Notes Payable	131,761	
Notes Payable		550,000

b. The 5-year amortization schedule is as follows.

	A	B	C	D	E
1	**Schedule of Bond Discount Amortization Effective-Interest Method 2% Note Discounted at 8% (imputed)**				
2	**Date**	**Cash Paid**	**Interest Expense**	**Discount Amortized**	**Carrying Value of Note**
3	12/31/2025				$418,239
4	12/31/2026	$11,000[a]	$ 33,459[b]	$ 22,459[c]	440,698[d]
5	12/31/2027	11,000	35,256	24,256	464,954
6	12/31/2028	11,000	37,196	26,196	491,150
7	12/31/2029	11,000	39,292	28,292	519,442
8	12/31/2030	11,000	41,558[e]	30,558	550,000
9		$55,000	$186,761	$131,761	
10	[a]$550,0000 × .02; [b]$418,239 × .08; [c]$33,459 − $11,000; [d]$418,239 + 22,459; [e]$3 adjustment due to rounding				

Wunderlich records payment of the first year's interest and amortization of the discount as follows.

December 31, 2026

Interest Expense	33,459	
Discount on Notes Payable		22,459
Cash		11,000

On Wunderlich's balance sheet at December 31, 2026, the note payable would be listed at carrying value of $440,698.

Excel Solution

i	8%
n	5
PMT	−$11,000
FV	−$550,000
PV	$418,241*

PV(rate, nper, pmt, [fv], [type])

*Difference due to rounding.

Mortgage Notes Payable

The most common form of long-term notes payable is a mortgage note payable, or installment note.

- A **mortgage note payable** is a promissory note secured by a document called a mortgage that pledges title to property as security for the loan.
- The borrower is required to make regular payments, or installments, on the principal over the term of the mortgage note payable.

Individuals, proprietorships, and partnerships use mortgage notes payable more frequently than do corporations.

The borrower usually receives cash for the face amount of the mortgage note. In that case, the face amount of the note is the true liability, and no discount or premium is involved. When the lender assesses "points," however, the total amount received by the borrower is less than the face amount of the note. Points, in mortgage financing, are the same as the original issue discount of bonds. Points raise the effective-interest rate above the rate specified in the note. A **point** is 1% of the face value of the note.

Example 13.17 Mortgage (Installment) Note

FACTS On December 31, 2025, Morning Brew purchased a new building for its corporate headquarters, borrowing $102,049, agreeing to pay $40,000 down and then paying the balance by making four equal installments of $20,000 each December 31. After considering mortgage points on the borrowing, an interest rate of 11% is imputed.

QUESTIONS What are the journal entries (a) on the date the note is issued, and (b) for the note on December 31, 2026, and December 31, 2029? (Assume that the effective-interest method is used for amortization purposes.)

SOLUTION

a. The entry at issuance of the installment note is as follows.

December 31, 2025		
Buildings	102,049	
Discount on Notes Payable	17,951	
Notes Payable		80,000
Cash		40,000

To record the building at the present value of the note plus the immediate cash payment:

PV of $20,000 annuity at 11% for 4 years ($20,000 × 3.10245)	$ 62,049
Down payment	40,000
Cost of the building	$102,049

Excel Solution

i	11%
n	4
PMT	–$20,000
FV	$0
PV	$62,049

PV(rate, nper, pmt, [fv], [type])

b. The amortization schedule for the installment note is as follows.

	A	B	C	D	E
1	**December 31, 2025 Schedule of Installment (Mortgage) Note Amortization**				
2	**Date**	**Cash Paid**	**Interest Expense**	**Decrease Carrying Value**	**Carrying Value of Note**
3	12/31/2025				$62,049
4	12/31/2026	$20,000	$6,825[a]	$13,175[b]	48,874[c]
5	12/31/2027	20,000	5,376	14,624	34,250
6	12/31/2028	20,000	3,768	16,232	18,018
7	12/31/2029	20,000	1,982	18,018	–
8	[a]$62,049 × .11; [b]$20,000 – $6,825; [c]$62,049 – $13,175				

The related journal entries are as follows.

December 31, 2026		
Notes Payable	20,000	
Cash		20,000
Interest Expense	6,825	
Discount on Notes Payable		6,825
December 31, 2029		
Notes Payable	20,000	
Cash		20,000
Interest Expense	1,982	
Discount on Notes Payable		1,982

As indicated in the amortization schedule and the journal entries in Example 13.17, each payment of $20,000 is comprised of interest expense and principal reduction, such that the installment note is amortized to zero at the maturity date. The company reports the reduction in principal for the next year as a current liability, and it classifies the remaining unpaid principal balance as a long-term liability on the balance sheet. For example, at December 31, 2026, the total liability is $48,874. Of that amount, $14,624 is current and $34,250 ($48,874 − $14,624) is long-term.

On the balance sheet, Morning Brew should report the mortgage note payable as a liability using a title such as "Mortgage Payable" or "Notes Payable—Secured," with a brief disclosure of the property pledged in the notes to the financial statements.

Lenders have partially replaced the traditional **fixed-rate mortgage** with alternative mortgage arrangements. Most lenders offer **variable-rate mortgages** (also called **floating-rate** or **adjustable-rate** mortgages) featuring interest rates tied to changes in the fluctuating market rate. Generally, the variable-rate lenders adjust the interest rate at either one- or three-year intervals, pegging the adjustments to changes in the prime rate or the U.S. Treasury bond rate.

Put It into Practice LO 13.3

Record Notes Payable

FACTS On January 1, 2025, Feucht Farms Inc. makes the two following acquisitions.

1. Purchases a barn by issuing a 6%, 8-year promissory note having a maturity value of $250,000 (interest payable annually). The company has to pay 11% interest for funds from its bank.
2. Purchases land having a fair value of $200,000 by issuing a 5-year, zero-interest-bearing promissory note in the face amount of $337,012.

INSTRUCTIONS

a. Record the two journal entries that should be recorded by Feucht Farms for the two purchases on January 1, 2025.

b. Record the interest at the end of the first year on both notes using the effective-interest method.

SOLUTION

a. 1. **January 1, 2025**

Buildings		185,674.30	
Discount on Notes Payable		64,325.70*	
Notes Payable			250,000.00

2. **January 1, 2025**

Land**		200,000.00	
Discount on Notes Payable		137,012.00	
Notes Payable			337,012.00

*Computation of the discount on notes payable:

Maturity value		$ 250,000.00
Present value of $250,000 due in 8 years at 11%—$250,000 × .43393 (Table 5.2 $_{i=11\%, n=8}$)	$108,482.50	
Present value of $15,000 ($250,000 × .06) payable annually for 8 years at 11% —$15,000 × 5.14612 (Table 5.4 $_{i=11\%, n=8}$)	77,191.80	
Present value of the note		(185,674.30)
Discount		$ 64,325.70

**The $200,000 capitalized land cost represents the present value of the note discounted for 5 years at 11%. Therefore, the carrying value of the note at January 1, 2025 is $200,000.

b. 1.

Interest Expense ($185,674.30 × .11)		20,424.17	
Discount on Notes Payable			5,424.17
Cash ($250,000 × .06)			15,000.00

2.

Interest Expense		22,000.00	
Discount on Notes Payable ($200,000 × .11)			22,000.00

13.4 Reporting and Analyzing Liabilities

LEARNING OBJECTIVE 4

Indicate how to present and analyze long-term debt.

Fair Value Option

As indicated earlier, noncurrent liabilities, such as bonds and notes payable, are generally measured at amortized cost or carrying value. However, companies have the option to record fair value in their accounts for most financial assets and liabilities, including bonds and notes payable. [5]

- The FASB believes that fair value measurement for financial instruments, including financial liabilities, provides more relevant and understandable information than amortized cost.
- The FASB considers fair value to be more relevant because it reflects the current cash equivalent value of financial instruments.

Fair Value Measurement

If companies choose the **fair value option**, noncurrent liabilities, such as bonds and notes payable, are reported at fair value. In addition, companies report unrealized holding gains or losses as part of net income or in other comprehensive income, depending on the circumstances. An unrealized holding gain or loss is the net change in the fair value of the liability from one period to another, exclusive of interest expense recognized. As a result, the company reports the liability at fair value at each reporting date.

Fair Value (Net Income) If a general change in interest rates occurs (for example, the Federal Reserve changes the long–term interest rates on government bonds), the fair value of a company's financial liabilities changes as well.

Example 13.18
Fair Value Option

FACTS Edmonds Company has issued $500,000 of 6% bonds at face value on May 1, 2025. Edmonds chooses the fair value option for these bonds. At December 31, 2025, the value of the bonds is now $480,000 because interest rates in the market have increased to 8%.

QUESTION What entry does Edmonds make to record the change in fair value?

SOLUTION

Edmonds makes the following entry.

December 31, 2025

Bonds Payable	20,000	
Unrealized Holding Gain or Loss—Income ($500,000 – $480,000)		20,000

The value of the debt securities falls because the bond is paying less than market rate for similar securities. As the journal entry indicates, the value of the bonds declined. This decline leads to a reduction in the bond liability and a resulting unrealized holding gain for the company, which is reported as part of net income.

The value of Edmonds' debt in Example 13.18 declined because market interest rates increased. Investors would rather invest in other bonds that have higher interest rates. It should be emphasized that Edmonds must continue to value the bonds payable at fair value in all subsequent periods.

Fair Value (Other Comprehensive Income) With the Edmonds bonds, we assumed that the decline in value of the bonds was due to a market interest rate increase. In other situations, the decline may occur because the bonds become more likely to default. That is, **if the creditworthiness of Edmonds Company declines, the value of its debt also declines**. If its creditworthiness declines, its bond investors are receiving a lower rate relative to investors with similar-risk investments. How to report these changes is controversial.

Some support reporting changes in the fair value for a decline in creditworthiness in income, noting that the debtholders' loss is the shareholders' gain. That is, the shareholders' claims on the assets of the company increase when the value of the debtholders' claims declines. Others question how Edmonds can record a gain when its creditworthiness is becoming worse. The FASB requires that the credit-risk portion of gains or losses on a financial liability be reported in other comprehensive income which flows through to the equity section of the balance sheet.

Example 13.19
Fair Value Option — Credit Deterioration

FACTS Refer to the Edmonds Company bonds in Example 13.18. Assume that the Edmonds Company fair value change on its bonds is due to its credit rating dropping from AA to BB.

QUESTION What entry does Edmonds make to record the change in fair value, under these conditions?

SOLUTION

Edmonds makes the following entry to record the fair value change in other comprehensive income.

December 31, 2025		
Bonds Payable	20,000	
Unrealized Holding Gain or Loss—Equity		20,000

As indicated, unrealized gains and losses due to changes in credit risk will **not** affect net income, but instead are reported as other comprehensive income.

When the Edmonds bonds in Example 13.19 mature or are extinguished, any accumulated other comprehensive gains and losses due to changes in creditworthiness are reclassified to net income.

Presentation and Decision Analysis

Companies that have large amounts and numerous issues of long-term debt frequently report only one amount in the balance sheet, supported with comments and schedules in the accompanying notes. Long-term debt that **matures within one year** should be reported as a current liability, unless using noncurrent assets to accomplish extinguishment. However, the company should disclose the method it will use in its liquidation. **[6]**, **[7]**

Off-Balance-Sheet Financing

What do **Krispy Kreme**, **Cisco**, **Enron**, and **Adelphia Communications** have in common? They all have been accused of using off-balance-sheet financing to minimize the

reporting of debt on their balance sheets. **Off-balance-sheet financing** is an attempt to borrow monies in such a way to prevent recording the obligations. It has become an issue of extreme importance. Many allege that Enron, in one of the largest corporate failures on record, hid a considerable amount of its debt off the balance sheet. As a result, any company that uses off-balance-sheet financing today risks investors dumping the company's stock. Consequently, the company's share price will suffer. Nevertheless, a considerable amount of off-balance-sheet financing continues to exist. As one writer noted, "The basic drives of humans are few: to get enough food, to find shelter, and to keep debt off the balance sheet."

Different Forms Off-balance-sheet financing can take many different forms. Here are two examples.

1. **Non-consolidated subsidiary**. Under GAAP, a parent company does not have to consolidate a subsidiary company that is less than 50% owned. In such cases, the parent does not report the assets and liabilities of the subsidiary. All the parent reports on its balance sheet is the investment in the subsidiary. As a result, users of the financial statements may not understand that the subsidiary has considerable debt for which the parent may ultimately be liable if the subsidiary runs into financial difficulty.
2. **Special-purpose entity (SPE)**. A company creates a **special-purpose entity (SPE)** to perform a special project. To illustrate, assume that Clarke Company decides to build a new plant. However, management does not want to report the plant or the borrowing used to fund the construction on its balance sheet. It therefore creates an SPE, the purpose of which is to build the plant. The SPE finances and builds the plant. In return, Clarke guarantees that it or some outside party will purchase all the products produced by the plant. As a result, Clarke might not report the asset or liability on its books. The accounting rules in this area are complex.

Rationale Why do companies engage in off-balance-sheet financing?

- A major reason is that many believe that **removing debt enhances the quality of the balance sheet** and permits credit to be obtained more readily and at less cost.
- Loan covenants often limit the amount of debt a company may have. As a result, the company uses off-balance-sheet financing because **these types of commitments might not be considered in computing the debt limitation**.
- Some argue that the asset side of the balance sheet is severely understated. For example, companies that use LIFO costing for inventories and depreciate assets on an accelerated basis will often have carrying amounts for inventories and property, plant, and equipment that are much lower than their fair values. As an offset to these lower values, some believe that part of the debt does not have to be reported. In other words, **if companies report assets at fair values**, less pressure would undoubtedly exist for off-balance-sheet financing arrangements.

Whether the arguments above have merit is debatable. The general idea of "out of sight, out of mind" may not be true in accounting. Many users of financial statements indicate that they factor these off-balance-sheet financing arrangements into their computations when assessing debt-to-equity relationships. Similarly, many loan covenants also attempt to account for these complex arrangements. Nevertheless, many companies still believe that benefits will accrue if they omit certain obligations from the balance sheet.

As a response to off-balance-sheet financing arrangements, the FASB has increased disclosure requirements. This response is consistent with an "efficient markets" philosophy: The important question is not whether the presentation is off-balance-sheet or not, but whether the items are disclosed at all. In addition, the SEC, in response to the Sarbanes-Oxley Act, now requires companies to provide related information in their management discussion and analysis sections. Specifically, companies must disclose (1) all contractual obligations in a tabular format and (2) contingent liabilities and commitments in either a textual or tabular format.

Illustration 13.12 shows **Best Buy Co.**'s tabular disclosure of its contractual obligations.

ILLUSTRATION 13.12 Note Disclosure of Contractual Obligations

Best Buy Co.
Contractual Obligations

The following table presents information regarding our contractual obligations by fiscal year ($ in millions):

		Payments due by period			
Contractual Obligations	**Total**	**Less than 1 year**	**1–3 years**	**3–5 years**	**More than 5 years**
Long-term debt obligations	$1,150	$–0–	$650	$–0–	$500
Interest payments	159	$50	32	26	51
Financing lease obligations	43	15	18	5	5
Operating lease obligations	3,060	738	1,199	667	456
Purchase obligations	2,090	1,977	86	23	4
Unrecognized tax benefits	318	0	0	0	0
Deferred compensation	22	0	0	0	0
Total	$6,842	$2,780	$1,985	$721	$1,016

Note For additional information refer to Note 5, Derivative Instruments: Note 6, Debt; Note 10, Leases; Note 11, Income Taxes and Note 13, Contingencies and Commitments, of the Notes to Consolidated Financial Statements, included in Item 8, Financial Statements and Supplementary Data, of this Annual Report on Form 10-K.

We believe that recording more obligations on the balance sheet will enhance financial reporting. Given the problems with companies such as **Enron**, **Dynegy**, **Williams Company**, **Chesapeake Energy**, and **Calpine**, and the Sarbanes-Oxley requirements, we expect that less off-balance-sheet financing will occur in the future.[8]

Note Disclosures

Note disclosures generally indicate the nature of the liabilities, maturity dates, interest rates, call provisions, conversion privileges, restrictions imposed by the creditors, and assets designated or pledged as security. Companies should show any assets pledged as security for the debt in the assets section of the balance sheet. The fair value of the long-term debt should also be disclosed if it is practical to estimate fair value. Finally, companies must disclose future payments for sinking fund requirements and maturity amounts of long-term debt during each of the next five years. The future payments for the sinking fund and long-term debt can be combined and reported as one amount in the notes.

Long-term debt generally has various **covenants** or **restrictions** that protect both lenders and borrowers. Some examples or covenants or restrictions include:

- Call provisions.
- Property pledged as collateral.

[8]As discussed in Chapter 20, the FASB addressed a major source of off-balance-sheet financing—operating leases—with issuance of new guidance (ASU 2016-2, Leases), which requires that payments on all leases (including operating leases) with terms longer than one year be reported as liabilities on the balance sheet. Nonetheless, it is unlikely that the FASB will be able to stop all types of off-balance-sheet transactions. Financial engineering is the "Holy Grail" of Wall Street. Developing new financial instruments and arrangements to sell and market to customers is not only profitable but also adds to the prestige of the investment firms that create them. Thus, new financial products will continue to appear that will test the ability of the FASB to develop appropriate accounting standards for them.

- Sinking fund requirements.
- Working capital and dividend restrictions.
- Limitations concerning the assumption of additional debt.

Although covenants can provide adequate protection to the long-term debtholder, many bondholders suffer considerable losses when companies add more debt to the capital structure.

Companies should describe these features in the body of the financial statements or the notes if important for a complete understanding of the financial position and the results of operations. These disclosures aid financial statement users in evaluating the amounts and timing of future cash flows. **Illustration 13.13** shows an example of the type of information provided for **Target Corporation**.

ILLUSTRATION 13.13 Long-Term Debt Disclosure

Target Corporation
(dollars in millions)

	February 3, 2020	January 28, 2019
Total current assets	$12,902	$12,519
Current liabilities		
Accounts payable	$ 9,920	$ 9,761
Accrued and other current liabilities	4,406	4,201
Current portion of long-term debt and other borrowings	161	1,052
Total current liabilities	14,487	15,014
Total noncurrent liabilities	16,459	14,979

19. Notes Payable and Long-Term Debt (in part)

At February 1, 2020, the carrying value and maturities of our debt portfolio were as follows:

Debt Maturities (millions)	February 1, 2020 Rate(*a*)	Balance
Due 2020–2024	3.8%	$ 2,205
Due 2025–2029	3.3	2,180
Due 2030–2034	4.2	1,305
Due 2035–2039	6.8	1,109
Due 2040–2044	4.0	1,466
Due 2045–2049	3.7	1,727
Total notes and debentures		9,992
Swap valuation adjustments		137
Finance lease obligations		1,370
Less: Amounts due within one year		(161)
Long-term debt and other borrowings		$11,338

(*a*) Reflects the weighted-average stated interest rate as of year-end.

Required principal payments on notes and debentures over the next five years are as follows:

Required Principal Payments

(millions)	2020	2021	2022	2023	2024
Total required principal payments	$94	$1,056	$63	$----	$1,000

Note that if the company has any off-balance-sheet financing, it must provide extensive note disclosure. [8]

Decision Analysis of Long-Term Debt

Long-term creditors and stockholders are interested in a company's long-run solvency, particularly its ability to pay interest as it comes due and to repay the face value of the debt at maturity. Debt to assets and times interest earned are two ratios that provide information about debt-paying ability and long-run solvency.

Debt to Assets Ratio The **debt to assets ratio** measures the percentage of the total assets provided by creditors. To compute it, divide total debt (both current and long-term liabilities) by total assets, as follows.

$$\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

The higher the percentage of total liabilities to total assets, the greater the risk that the company may be unable to meet its maturing obligations.

Times Interest Earned The **times interest earned** ratio indicates the company's ability to meet interest payments as they come due. It is computed by dividing the sum of net income, interest expense, and income tax expense by interest expense.

$$\text{Times Interest Earned} = \frac{\text{Net Income} + \text{Interest Expense} + \text{Income Tax Expense}}{\text{Interest Expense}}$$

To illustrate these ratios, we use data from **Target**'s 2020 annual report. Target has total liabilities of $30,946 ($14,487 + $16,459) million, total assets of $42,779 million, interest expense of $477 million, income taxes of $921 million, and income of $3,281 million. We compute Target's debt to assets and times interest earned ratios as shown in **Illustration 13.14**.

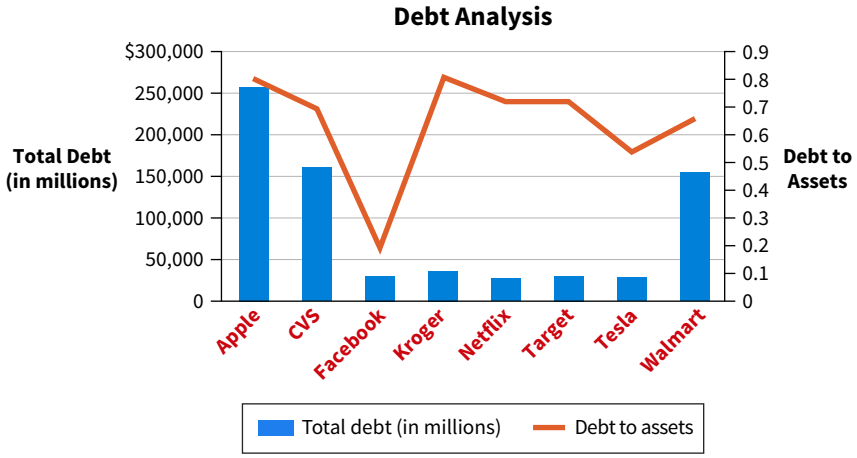
ILLUSTRATION 13.14
Computation of Long-Term Debt Ratios for Target

	2020	2019
Debt to assets	$\frac{\$30,946}{\$42,779} = 72.3\%$	$\frac{\$29,993}{\$41,290} = 72.6\%$
Time intereset earned	$\frac{(\$3,281 + \$477 + \$921)}{\$477} = 9.81$	$\frac{(\$2,937 + \$461 + \$746)}{\$461} = 8.99$

Even though Target has a relatively high debt to assets ratio of 72.3%, its interest coverage of 9.81 times indicates it can easily meet its interest payments as they come due. Additionally, the debt to assets ratio is relatively consistent year over year while the interest coverage metric has improved.

Analytics in Action: Helping to Put Debt into Perspective

Analyzing a company's long-term debt takes much more than simply looking at its balance sheet. As shown in the following chart, total debt levels can vary quite substantially across different companies. If we look just at **Apple**'s debt levels without any other data, we may conclude that it is holding too much debt, especially relative to the other companies listed. But when we pull in the debt to assets ratio, that metric is much more consistent across each company.



Debt isn't necessarily a bad thing either; companies may borrow to fund innovation or business expansion. In Apple's case, it is using some of its cash to fund share repurchases to get cash back in the hands of its shareholders. With low interest rates, it may be earning more on its cash invested than what it costs the company to borrow.

Using analytics allows users to pull financial data from many companies and benchmark across industries and track trends over time, allowing investors and creditors to truly understand a company's financial position.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

APPENDIX **13A**

Troubled-Debt Restructuring

LEARNING OBJECTIVE *5

Describe the accounting for a debt restructuring.

Practically every day, the *Wall Street Journal* runs a story about some company in financial difficulty. In most troubled-debt situations, the creditor usually first recognizes a loss on impairment. Subsequently, the creditor either modifies the terms of the loan or the debtor settles the loan on terms unfavorable to the creditor. In unusual cases, the creditor forces the debtor into bankruptcy in order to ensure the highest possible collection on the loan. **Illustration 13A.1** shows this continuum.

ILLUSTRATION 13A.1 Usual Progression in Troubled-Debt Situations

To illustrate, consider the case of **Huffy Corp.**, a name that adorned the first bicycle of many American children. Before its bankruptcy, Huffy's creditors likely recognized a loss on impairment. Subsequently, the creditors either modified the terms of the loan or settled it on terms unfavorable to the creditor. Finally, the creditors forced Huffy into bankruptcy, and the suppliers received a 30 % equity stake in Huffy. These terms helped ensure the highest possible collection on the Huffy loan.

We discussed the accounting for note receivable impairments in Appendix 6B. The purpose of this appendix is to explain how creditors and debtors report information in financial statements related to troubled-debt restructurings.

A **troubled-debt restructuring** occurs when a creditor "for economic or legal reasons related to the debtor's financial difficulties grants a concession to the debtor that it would not otherwise consider." **[9]** Thus, a troubled-debt restructuring does not apply to modifications of a debt obligation that reflect general economic conditions leading to a reduced interest rate. Nor does it apply to the refunding of an old debt with new debt having an effective-interest rate approximately equal to that of similar debt issued by nontroubled debtors.

A troubled-debt restructuring involves one of two basic types of transactions:

1. Settlement of debt at less than its carrying amount.
2. Continuation of debt with a modification of terms.

Settlement of Debt

In addition to using cash, settling a debt obligation can involve either a transfer of noncash assets (real estate, receivables, or other assets) or the issuance of the debtor's stock. In these situations, **the creditor should account for the noncash assets or equity interest received at their fair value**.

The debtor must determine the excess of the carrying amount of the payable over the fair value of the assets or equity transferred (gain). Likewise, the creditor must determine the excess of the receivable over the fair value of those same assets or equity interests transferred (loss). The debtor recognizes a gain equal to the amount of the excess. The creditor normally charges the excess (loss) against Allowance for Doubtful Accounts. In addition, the debtor recognizes a gain or loss on disposition of assets to the extent that the fair value of those assets differs from their carrying amount (book value).

Transfer of Assets

Assume that American City Bank loaned $20,000,000 to Union Mortgage Company. Union Mortgage, in turn, invested these monies in residential apartment buildings. However, because of low occupancy rates, it cannot meet its loan obligations. American City Bank agrees to accept from Union Mortgage real estate with a fair value of $16,000,000 in full settlement of the $20,000,000 loan obligation. The real estate has a carrying value of $21,000,000 on the books of Union Mortgage. American City Bank (creditor) records this transaction as follows.

Land	16,000,000	
Allowance for Doubtful Accounts	4,000,000	
Notes Receivable (from Union Mortgage)		20,000,000

The bank records the real estate at fair value. Further, it makes a charge to Allowance for Doubtful Accounts to record the bad debt write-off.

Union Mortgage (debtor) records this transaction as follows.

Notes Payable (to American City Bank)	20,000,000	
Loss on Disposal of Land	5,000,000	
Land		21,000,000
Gain on Restructuring of Debt		4,000,000

Union Mortgage has a loss on the disposition of real estate in the amount of $5,000,000 (the difference between the $21,000,000 book value and the $16,000,000 fair value). It should show

this as an ordinary loss on the income statement. In addition, it has a gain on restructuring of debt of $4,000,000 (the difference between the $20,000,000 carrying amount of the note payable and the $16,000,000 fair value of the real estate).

Granting of Equity Interest

Assume that American City Bank agrees to accept from Union Mortgage 320,000 shares of common stock ($10 par) that has a fair value of $16,000,000, in full settlement of the $20,000,000 loan obligation. American City Bank (creditor) records this transaction as follows.

Equity Investments	16,000,000	
Allowance for Doubtful Accounts	4,000,000	
Notes Receivable (from Union Mortgage)		20,000,000

It records the stock as an investment at the fair value at the date of restructure.

Union Mortgage (debtor) records this transaction as follows.

Notes Payable (to American City Bank)	20,000,000	
Common Stock (320,000 × $10)		3,200,000
Paid-in Capital in Excess of Par— Common Stock		12,800,000
Gain on Restructuring of Debt		4,000,000

It records the stock issued in the normal manner. It records the difference between the par value and the fair value of the stock as additional paid-in capital.

Modification of Terms

In some cases, a debtor's serious short-run cash flow problems will lead it to request one or a combination of the following modifications:

1. Reduction of the stated interest rate.
2. Extension of the maturity date of the face amount of the debt.
3. Reduction of the face amount of the debt.
4. Reduction or deferral of any accrued interest.

The creditor's loss is based on expected cash flows discounted at the historical effective rate of the loan. [10] The debtor calculates its gain based on **undiscounted amounts**. As a consequence, **the gain recorded by the debtor will not equal the loss recorded by the creditor under many circumstances**.[9]

Two examples demonstrate the accounting for a troubled-debt restructuring by debtors and creditors:

1. The debtor does not record a gain.
2. The debtor does record a gain.

In both instances, the creditor has a loss.

[9] In response to concerns expressed about this nonsymmetric treatment, the FASB stated that it did not address debtor accounting because expansion of the scope of the statement would delay its issuance. By basing the debtor calculation on undiscounted amounts, the amount of gain (if any) recognized by the debtor is reduced at the time the modification of terms occurs. If fair value was used, the gain recognized would be greater. The result of this approach is to spread the unrecognized gain over the life of the new agreement. We believe that this accounting is inappropriate and hopefully will change as more fair value measurements are introduced into the financial statements.

Example 1—No Gain for Debtor

This example demonstrates a restructuring in which the debtor records no gain.[10] On December 31, 2024, Morgan National Bank enters into a debt restructuring agreement with Resorts Development Company, which is experiencing financial difficulties. The bank restructures a $10,500,000 loan receivable issued at par (interest paid to date) by:

1. Reducing the principal obligation from $10,500,000 to $9,000,000;
2. Extending the maturity date from December 31, 2024, to December 31, 2028; and
3. Reducing the interest rate from 12% to 8%.

Debtor Calculations

The total future cash flow, after restructuring of $11,880,000 ($9,000,000 of principal plus $2,880,000 of interest payments[11]), exceeds the total pre-restructuring carrying amount of the debt of $10,500,000. Consequently, **Resorts Development the debtor) records no gain nor makes any adjustment** to the carrying amount of the payable. As a result, Resorts Development (debtor) makes no entry at the date of restructuring.

Resorts Development (the debtor) must compute a new effective-interest rate in order to record interest expense in future periods. The new effective-interest rate equates the present value of the future cash flows specified by the new terms with the pre-restructuring carrying amount of the debt. In this case, Resorts Development computes the new rate by relating the pre- restructure carrying amount ($10,500,000) to the total future cash flow ($11,880,000). The rate necessary to discount the total future cash flow ($11,880,000), to a present value equal to the remaining balance ($10,500,000), is 3.46613%.[12]

On the basis of the effective rate of 3.46613%, Resorts Development prepares the schedule shown in **Illustration 13A.2**.

	A	B	C	D	E
1	**Resorts Development Co. (Debtor)**				
2	**Date**	**Cash Paid (8%)**	**Interest Expense (3.46613%)**	**Reduction of Carrying Value**	**Carrying Value of Note**
3	12/31/2024				$10,500,000
4	12/31/2025	$ 720,000[a]	$ 363,944[b]	$ 356,056[c]	10,143,944[d]
5	12/31/2026	720,000	351,602	368,398	9,775,546
6	12/31/2027	720,000	338,833	381,167	9,394,379
7	12/31/2028	720,000	325,621	394,379	9,000,000
8		$2,880,000	$1,380,000	$1,500,000	
9	[a]$9,000,000 × .08; [b]$10,500,000 × .0346613; [c]$720,000 − $363,944; [d]$10,500,000 − $356,056				

ILLUSTRATION 13A.2 Schedule Showing Reduction of Carrying Amount of Note

Excel Solution

n	4
PMT	$720,000
PV	−$10,500,000
FV	$9,000,000
Rate	3.466%

RATE(nper, pmt, pv, [fv], [type], [guess])

[10]Note that the examples given for restructuring assume the creditor made no previous entries for impairment. In actuality, it is likely that the creditor would have already made an entry when the loan initially became impaired. Restructuring would, therefore, simply require an adjustment of the initial estimated bad debt by the creditor. Recall, however, that the debtor makes no entry upon impairment.

[11]Total interest payments are $9,000,000 × .08 × 4 years = $2,880,000.

[12]An accurate interest rate i can be found by using the formulas given at the tops of Tables 5.2 and 5.4 to set up the following equation.

$$\$10{,}500{,}000 = \frac{1}{(1+i)^4} \times \$9{,}000{,}000 + \frac{1-\frac{1}{(1+i)^4}}{i} \times \$720{,}000$$

Solving algebraically for i, we find that $i = 3.46613\%$.

Thus, on December 31, 2025 (date of first interest payment after restructure), the debtor makes the following entry.

December 31, 2025

Notes Payable	356,056	
Interest Expense	363,944	
Cash		720,000

The debtor makes a similar entry (except for different amounts for debits to Notes Payable and Interest Expense) each year until maturity. At maturity, Resorts Development makes the following entry.

December 31, 2028

Notes Payable	9,000,000	
Cash		9,000,000

Creditor Calculations

Morgan National Bank (creditor) must calculate its loss based on the expected future cash flows discounted at the historical effective rate of the loan. It calculates this loss as shown in **Illustration 13A.3**.

ILLUSTRATION 13A.3 Computation of Loss to Creditor on Restructuring

Pre-restructure carrying amount		$10,500,000
Present value of restructured cash flows:		
Present value of $9,000,000 due in 4 years at 12%, interest payable annually (Table 5.2 $i = 12\%, n = 4$; $9,000,000 × .63552)	$5,719,680	
Present value of $720,000 interest payable annually for 4 years at 12% (Table 5.4 $i = 12\%, n = 4$; $720,000 × 3.03735)	2,186,892	
Present value of restructured cash flows		(7,906,572)
Loss on restructuring		$2,593,428

Excel Solution

i	12%
n	4
PMT	–$720,000
FV	–$9,000,000
PV	$7,906,554*

PV(rate, nper, pmt, [fv], [type])

*Difference due to rounding.

As a result, Morgan National Bank records bad debt expense as follows (assuming no establishment of an allowance balance from recognition of an impairment).

Bad Debt Expense	2,593,428	
Allowance for Doubtful Accounts		2,593,428

In subsequent periods, Morgan National Bank reports interest revenue based on the historical effective rate. **Illustration 13A.4** provides the following interest and amortization information.

ILLUSTRATION 13A.4 Schedule of Interest and Amortization After Debt Restructuring

AutoSave Off

	A	B	C	D	E
1	Morgan National Bank (Creditor)				
2	**Date**	**Cash Received (8%)**	**Interest Revenue (12%)**	**Increase of Carrying Value**	**Carrying Value of Note**
3	12/31/2024				$7,906,572
4	12/31/2025	$ 720,000[a]	$ 948,789[b]	$ 228,789[c]	8,135,361[d]
5	12/31/2026	720,000	976,243	256,243	8,391,604
6	12/31/2027	720,000	1,006,992	286,992	8,678,596
7	12/31/2028	720,000	1,041,404[e]	321,404[e]	9,000,000
8	Total	$2,880,000	$3,973,428	$1,093,428	
9	[a]$9,000,000 × .08; [b]$7,906,572 × .12; [c]$948,789 – $720,000; [d]$7,906,572 + $228,789; [e]$28 adjustment due to rounding				

Sheet1

On December 31, 2025, Morgan National Bank makes the following entry.

December 31, 2025		
Cash	720,000	
Allowance for Doubtful Accounts	228,789	
Interest Revenue		948,789

Morgan National Bank makes a similar entry (except for different amounts debited to Allowance for Doubtful Accounts and credited to Interest Revenue) each year until maturity. At maturity, the company makes the following entry.

December 31, 2028		
Cash	9,000,000	
Allowance for Doubtful Accounts	1,500,000	
Notes Receivable		10,500,000

Example 2—Gain for Debtor

If the pre-restructure carrying amount exceeds the total future cash flows as a result of a modification of the terms, the debtor records a gain. To illustrate, assume the facts in the previous example except that Morgan National Bank reduces the principal to $7,000,000 (and extends the maturity date to December 31, 2028, and reduces the interest from 12% to 8%). The total future cash flow is now $9,240,000 ($7,000,000 of principal plus $2,240,000 of interest[13]), which is $1,260,000 ($10,500,000 − $9,240,000) less than the pre-restructure carrying amount of $10,500,000.

Under these circumstances, Resorts Development (debtor) reduces the carrying amount of its payable $1,260,000 and records a gain of $1,260,000. On the other hand, Morgan National Bank (creditor) debits its Bad Debt Expense for $4,350,444. **Illustration 13A.5** shows this computation.

Pre-restructure carrying amount		$10,500,000
Present value of restructured cash flows:		
Present value of $7,000,000 due in 4 years at 12%, interest payable annually (Table 5.2 $i = 12\%, n = 4$; $7,000,000 × .63552)	$4,448,640	
Present value of $560,000 interest payable annually for 4 years at 12% (Table 5.4 $i = 12\%, n = 4$; $560,000 × 3.03735)	1,700,916	(6,149,556)
Creditor's loss on restructuring		$ 4,350,444

ILLUSTRATION 13A.5
Computation of Loss to Creditor on Restructuring

Excel Solution

i	12%
n	4
PMT	−$560,000
FV	−$7,000,000
PV	$6,149,542*

PV(rate, nper, pmt, [fv], [type])

* Difference due to rounding.

Illustration 13A.6 shows the entries to record the gain and loss on the debtor's and creditor's books at the date of restructure, December 31, 2024.

ILLUSTRATION 13A.6 Debtor and Creditor Entries to Record Gain and Loss on Note

December 31, 2024 (date of restructure)					
Resorts Development Co. (Debtor)			**Morgan National Bank (Creditor)**		
Notes Payable	1,260,000		Bad Debt Expense	4,350,444	
Gain on Restructuring of Debt		1,260,000	Allowance for Doubtful Accounts		4,350,444

For Resorts Development (debtor), because the new carrying value of the note ($10,500,000 − $1,260,000 = $9,240,000) equals the sum of the undiscounted cash flows ($9,240,000), the imputed interest rate is 0%. Consequently, all of the future cash flows reduce the principal balance, and the company recognizes no interest expense.

[13] Total interest payments are $7,000,000 × .08 × 4 = $2,240,000.

Morgan National reports the interest revenue in the same fashion as the previous example—that is, using the historical effective-interest rate applied toward the newly discounted value of the note. Illustration 13A.7 shows interest computations.

ILLUSTRATION 13A.7 Schedule of Interest and Amortization After Debt Restructuring

	A	B	C	D	E
1	**Morgan National Bank (Creditor)**				
2	**Date**	**Cash Received (8%)**	**Interest Revenue (12%)**	**Increase of Carrying Value**	**Carrying Value of Note**
3	12/31/2024				$6,149,556
4	12/31/2025	$ 560,000[a]	$ 737,947[b]	$177,947[c]	6,327,503[d]
5	12/31/2026	560,000	759,300	199,300	6,526,803
6	12/31/2027	560,000	783,216	223,216	6,750,019
7	12/31/2028	560,000	809,981[e]	249,981[e]	7,000,000
8	Total	$2,240,000	$3,090,444	$850,444	
9	[a]$7,000,000 × .08; [b]$6,149,556 × .12; [c]$737,947 – $560,000; [d]$6,149,556 + $177,947; [e]$21 adjustment due to rounding				

The journal entries in Illustration 13A.8 demonstrate the accounting by debtor and creditor for periodic interest payments and final principal payment.

ILLUSTRATION 13A.8 Debtor and Creditor Entries to Record Periodic Interest and Final Principal Payments

Resorts Development Co. (Debtor)			Morgan National Bank (Creditor)		
December 31, 2025 (date of first interest payment following restructure)					
Notes Payable	560,000		Cash	560,000	
Cash		560,000	Allowance for Doubtful Accounts	177,947	
			Interest Revenue		737,947
December 31, 2026, 2027, and 2028 (dates of 2nd, 3rd, and last interest payments)					
(Debit and credit same accounts as 12/31/25 using applicable amounts from appropriate amortization schedules.)					
December 31, 2028 (date of principal payment)					
Notes Payable	7,000,000		Cash	7,000,000	
Cash		7,000,000	Allowance for Doubtful Accounts	3,500,000	
			Notes Receivable		10,500,000

Concluding Remarks

The accounting for troubled debt is complex because the accounting standards allow for use of different measurement standards to determine the loss or gain reported. In addition, the assets and liabilities reported are sometimes not stated at historical cost or fair value, but at amounts adjusted for certain events but not others. This cumbersome accounting demonstrates the need for adoption of a comprehensive fair-value model for financial instruments that is consistent with finance concepts for pricing these financial instruments.

Review and Practice

Key Terms Review

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Learning Objectives Review

1 Describe the nature of bonds and indicate the accounting for bond issuances.

Incurring long-term debt is often a formal procedure. The bylaws of corporations usually require approval by the board of directors and the stockholders before corporations can issue bonds or can make other long-term debt arrangements. Generally, long-term debt has various covenants or restrictions. The covenants and other terms of the agreement between the borrower and the lender are stated in the bond indenture or note agreement.

Various types of bond issues are (1) secured and unsecured bonds; (2) term, serial, and callable bonds; (3) convertible, commodity-backed, and deep-discount bonds; (4) registered and bearer (coupon) bonds; and (5) income and revenue bonds. The variety in the types of bonds results from attempts to attract capital from different investors and risk-takers and to satisfy the cash flow needs of the issuers.

The market values a bond at the present value of its future cash flows, which consist of interest and principal. The rate used to compute the present value of these cash flows is the interest rate that provides an acceptable return on an investment commensurate with the issuer's risk characteristics. The interest rate written in the terms of the bond indenture and ordinarily appearing on the bond certificate is the stated, coupon, or nominal rate. The issuer of the bonds sets the rate and expresses it as a percentage of the face value (also called the par value, principal amount, or maturity value) of the bonds. If the rate employed by the buyers differs from the stated rate, the present value of the bonds computed by the buyers will differ from the face value of the bonds. The difference between the face value and the present value of the bonds is either a discount or premium.

The discount (premium) is amortized and charged (credited) to interest expense over the life of the bonds. Amortization of a discount increases bond interest expense, and amortization of a premium decreases bond interest expense. The profession's preferred procedure for amortization of a discount or premium is the effective-interest method. **Under the effective-interest method,** (1) bond interest expense is computed by multiplying the carrying value of the bonds at the beginning of the period by the effective-interest rate; then, (2) the bond discount or premium amortization is determined by comparing the bond interest expense with the interest to be paid.

2 Describe the accounting for the extinguishment of debt.

At the time of **extinguishment (reacquisition, redemption, or refunding)** of long-term debt, the unamortized premium or discount must be amortized up to the reacquisition date. The reacquisition price is the amount paid on extinguishment or redemption before maturity, including any call premium and expense of reacquisition. On any specified date, the net carrying amount of the debt is the amount payable at maturity, adjusted for unamortized premium or discount. Any excess of the net carrying amount over the reacquisition price is a gain from extinguishment. The excess of the reacquisition price over the net carrying amount is a loss from extinguishment. Gains and losses on extinguishments are recognized currently in income.

3 Explain the accounting for long-term notes payable.

Accounting procedures for notes payable and bonds are similar. Like a bond, a note is valued at the present value of its expected future interest and principal cash flows, with any discount or premium being similarly amortized over the life of the note. Whenever the face amount of the note does not reasonably represent the present value of the consideration in the exchange, a company must evaluate the entire arrangement in order to properly record the exchange and the subsequent interest.

4 Indicate how to present and analyze long-term debt.

Companies have the **option to record fair value** in their accounts for most financial assets and liabilities, including noncurrent liabilities. Fair value measurement for financial instruments, including financial liabilities, provides more relevant and understandable information than amortized cost. If companies choose the fair value option, noncurrent liabilities, such as bonds and notes payable, are recorded at fair value, with unrealized holding gains or losses reported as part of net income. An unrealized holding gain or loss is the net change in the fair value of the liability from one period to another, exclusive of interest expense recognized. Fair value gains due to credit deterioration are recorded in other comprehensive income.

Off-balance-sheet financing is an attempt to borrow funds in such a way to prevent recording obligations. Examples of off-balance-sheet arrangements are (1) non-consolidated subsidiaries and (2) special-purpose entities.

Companies that have large amounts and numerous issues of long-term debt frequently report only one amount in the balance sheet and support this with comments and schedules in the accompanying notes. Any assets pledged as security for the debt should be shown in the assets section of the balance sheet. Long-term debt that matures within one year should be reported as a current liability, unless redemption is to be accomplished with other than current assets. If a company plans to refinance the debt, convert it into stock, or retire it from a bond retirement fund, it should continue to report it as noncurrent, accompanied with a note explaining the method it will use in the debt's liquidation. Disclosure is required of future payments for sinking fund requirements and maturity amounts of long-term debt during each of the next five years. Debt to assets and times interest earned are two ratios that provide information about debt-paying ability and long-run solvency.

*5 Describe the accounting for a debt restructuring.

There are two types of debt settlements: (1) transfer of noncash assets, and (2) granting of equity interest. Creditors and debtors record losses and gains on settlements based on fair values. For accounting purposes, there are also two types of restructurings with continuation of debt with modified terms: (1) the carrying amount of debt is less than the future cash flows, and (2) the carrying amount of debt exceeds the total future cash flows. Creditors record losses on these restructurings based on the expected future cash flows discounted at the historical effective-interest rate. The debtor determines its gain based on undiscounted cash flows.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

(*Unless instructed otherwise, round all answers to the nearest dollar.*)

Questions

1. (a) From what sources might a corporation obtain funds through long-term debt? (b) What is a bond indenture? What does it contain? (c) What is a mortgage?

2. **Potlatch Corporation** has issued various types of bonds such as term bonds, income bonds, and debentures. Differentiate between term bonds, mortgage bonds, debenture bonds, income bonds, callable bonds, registered bonds, bearer or coupon bonds, convertible bonds, commodity-backed bonds, and deep discount bonds.

3. Distinguish between the following interest rates for bonds payable:
   - **a.** Yield rate.
   - **b.** Nominal rate.
   - **c.** Stated rate.
   - **e.** Effective rate.
   - **d.** Market rate.

4. Distinguish between the following values relative to bonds payable:
   - **a.** Maturity value.
   - **b.** Face value.
   - **c.** Market (fair) value.
   - **d.** Par value.

5. Under what conditions of bond issuance does a discount on bonds payable arise? Under what conditions of bond issuance does a premium on bonds payable arise?

6. How should Discount on Bonds Payable be reported on the financial statements? Premium on Bonds Payable?

7. What are the two methods of amortizing discount and premium on bonds payable? Explain each.

8. Zopf Company sells its bonds at a premium and applies the effective-interest method in amortizing the premium. Will the annual interest expense increase or decrease over the life of the bonds? Explain.

9. **Briggs and Stratton** recently issued debt with issue costs of $5.1 million. How should the costs of issuing these bonds be accounted for and classified in the financial statements?

10. Will the amortization of Discount on Bonds Payable increase or decrease Bond Interest Expense? Explain.

11. What is the "call" feature of a bond issue? How does the call feature affect the amortization of bond premium or discount?

12. Why would a company wish to reduce its bond indebtedness before its bonds reach maturity? Indicate how this can be done and the correct accounting treatment for such a transaction.

13. How are gains and losses from extinguishment of a debt classified in the income statement? What disclosures are required of such transactions?

14. What is done to properly record a transaction involving the issuance of a non-interest-bearing long-term note in exchange for property?

15. How is the present value of a non-interest-bearing note computed?

16. When is the stated interest rate of a debt instrument presumed to be fair?

17. What are the considerations in imputing an appropriate interest rate?

18. Differentiate between a fixed-rate mortgage and a variable-rate mortgage.

19. What is the fair value option? Briefly describe the controversy of applying the fair value option to financial liabilities.

20. Pierre Company has a 12% note payable with a carrying value of $20,000. Pierre applies the fair value option to this note. Given an increase in market interest rates, the fair value of the note is $22,600. Prepare the entry to record the fair value option for this note, assuming (a) no change in credit risk, and (b) the change is due to a change in credit risk.

21. What disclosures are required relative to long-term debt and sinking fund requirements?

22. What is off-balance-sheet financing? Why might a company be interested in using off-balance-sheet financing?

23. What are some forms of off-balance-sheet financing?

24. Explain how a non-consolidated subsidiary can be a form of off-balance-sheet financing.

*25. What are the types of situations that result in troubled debt?

*26. What are the general rules for measuring gain or loss by both creditor and debtor in a troubled-debt restructuring involving a settlement?

*27. **a.** In a troubled-debt situation, why might the creditor grant concessions to the debtor?

b. What type of concessions might a creditor grant the debtor in a troubled-debt situation?

*28. What are the general rules for measuring and recognizing gain or loss by both the debtor and the creditor in a troubled-debt restructuring involving a modification of terms?

*29. What is meant by "accounting symmetry" between the entries recorded by the debtor and creditor in a troubled-debt restructuring involving a modification of terms? In what ways is the accounting for troubled-debt restructurings non-symmetrical?

*30. Under what circumstances would a transaction be recorded as a troubled-debt restructuring by only one of the two parties to the transaction?

Brief Exercises

BE13.1 (LO 1) Whiteside Corporation issues $500,000 of 9% bonds, due in 10 years, with interest payable semiannually. At the time of issue, the market rate for such bonds is 10%. Compute the issue price of the bonds.

BE13.2 (LO 1) The Colson Company issued $300,000 of 10% bonds on January 1, 2025. The bonds are due January 1, 2030, with interest payable each July 1 and January 1. The bonds are issued at face value. Prepare Colson's journal entries for (a) the January issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry.

BE13.3 (LO 1) Assume the bonds in BE13.2 were issued at 98. Prepare the journal entries for (a) January 1, (b) July 1, and (c) December 31. Assume The Colson Company records straight-line amortization semiannually.

BE13.4 (LO 1) Assume the bonds in BE13.2 were issued at 103. Prepare the journal entries for (a) January 1, (b) July 1, and (c) December 31. Assume The Colson Company records straight-line amortization semiannually.

BE13.5 (LO 1) Devers Corporation issued $400,000 of 6% bonds on May 1, 2025. The bonds were dated January 1, 2025, and mature January 1, 2028, with interest payable July 1 and January 1. The bonds were issued at face value plus accrued interest. Prepare Devers's journal entries for (a) the May 1 issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry.

BE13.6 (LO 1) On January 1, 2025, JWS Corporation issued $600,000 of 7% bonds, due in 10 years. The bonds were issued for $559,224, and pay interest each July 1 and January 1. JWS uses the effective-interest method. Prepare the company's journal entries for (a) the January 1 issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry. Assume an effective-interest rate of 8%.

BE13.7 (LO 1) Assume the bonds in BE13.6 were issued for $644,636 and the effective-interest rate is 6%. Prepare the company's journal entries for (a) the January 1 issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry.

BE13.8 (LO 1) Teton Corporation issued $600,000 of 7% bonds on November 1, 2025, for $644,636. The bonds were dated November 1, 2025, and mature in 10 years, with interest payable each May 1 and November 1. Teton uses the effective-interest method with an effective rate of 6%. Prepare Teton's December 31, 2025, adjusting entry.

BE13.9 (LO 2) On January 1, 2025, Henderson Corporation redeemed $500,000 of bonds at 99. At the time of redemption, the unamortized premium was $15,000. Prepare the corporation's journal entry to record the reacquisition of the bonds.

BE13.10 (LO 3) Coldwell, Inc. issued a $100,000, 4-year, 10% note at face value to Flint Hills Bank on January 1, 2025, and received $100,000 cash. The note requires annual interest payments each December 31. Prepare Coldwell's journal entries to record (a) the issuance of the note and (b) the December 31 interest payment.

BE13.11 (LO 3) Samson Corporation issued a 4-year, $75,000, zero-interest-bearing note to Brown Company on January 1, 2025, and received cash of $47,664. The implicit interest rate is 12%. Prepare Samson's journal entries for (a) the January 1 issuance and (b) the December 31 recognition of interest.

BE13.12 (LO 3) McCormick Corporation issued a 4-year, $40,000, 5% note to Greenbush Company on January 1, 2025, and received a computer that normally sells for $31,495. The note requires annual interest payments each December 31. The market rate of interest for a note of similar risk is 12%. Prepare McCormick's journal entries for (a) the January 1 issuance and (b) the December 31 interest.

BE13.13 (LO 3) Shlee Corporation issued a 4-year, $60,000, zero-interest-bearing note to Garcia Company on January 1, 2025, and received cash of $60,000. In addition, Shlee agreed to sell merchandise to Garcia at an amount less than regular selling price over the 4-year period. The market rate of interest for similar notes is 12%. Prepare Shlee Corporation's January 1 journal entry.

BE13.14 (LO 4) Shonen Knife Corporation has elected to use the fair value option for one of its notes payable. The note was issued at an effective rate of 11% and has a carrying value of $16,000. At year-end, Shonen Knife's borrowing rate (credit risk) has declined; the fair value of the note payable is now $17,500. (a) Determine the unrealized holding gain or loss on the note. (b) Prepare the entry to record any unrealized holding gain or loss.

BE13.15 (LO 4) At December 31, 2025, Hyasaki Corporation has the following account balances:

Bonds payable, due January 1, 2034	$2,000,000
Discount on bonds payable	88,000
Interest payable	80,000

Show how the above accounts should be presented on the December 31, 2025, balance sheet, including the proper classifications.

Exercises

E13.1 (LO 1) (Classification of Liabilities) Presented below are various account balances of K.D. Lang Inc.

a. Unamortized premium on bonds payable, of which $3,000 will be amortized during the next year.

b. Bank loans payable of a winery, due March 10, 2029. (The product requires aging for 5 years before sale.)

c. Serial bonds payable, $1,000,000, of which $200,000 are due each July 31.

d. Amounts withheld from employees' wages for income taxes.

e. Notes payable due January 15, 2028.

f. Credit balances in customers' accounts arising from returns and allowances after collection in full of account.

g. Bonds payable of $2,000,000 maturing June 30, 2026.

h. Overdraft of $1,000 in a bank account. (No other balances are carried at this bank.)

i. Deposits made by customers who have ordered goods.

Instructions

Indicate whether each of the items above should be classified on December 31, 2025, as a current liability, a long-term liability, or under some other classification. Consider each one independently from all others;

that is, do not assume that all of them relate to one particular business. If the classification of some of the items is doubtful, explain why in each case.

E13.2 (LO 1) (Classification) The following items are found in the financial statements.

a. Discount on bonds payable.
b. Interest expense (credit balance).
c. Unamortized bond issue costs.
d. Gain on repurchase of debt.
e. Mortgage payable (payable in equal amounts over next 3 years).
f. Debenture bonds payable (maturing in 5 years).
g. Notes payable (due in 4 years).
h. Premium on bonds payable.
i. Bonds payable (due in 3 years).

Instructions

Indicate how each of these items should be classified in the financial statements.

E13.3 (LO 1) (Entries for Bond Transactions) Presented below are two independent situations.

1. On January 1, 2025, Simon Company issued $200,000 of 9%, 10-year bonds at par. Interest is payable quarterly on April 1, July 1, October 1, and January 1.
2. On June 1, 2025, Garfunkel Company issued $100,000 of 12%, 10-year bonds dated January 1 at par plus accrued interest. Interest is payable semiannually on July 1 and January 1.

Instructions

For each of these two independent situations, prepare journal entries to record the following.

a. The issuance of the bonds.
b. The payment of interest on July 1.
c. The accrual of interest on December 31.

E13.4 (LO 1) Excel (Entries for Bond Transactions—Straight-Line) Celine Dion Company issued $600,000 of 10%, 20-year bonds on January 1, 2025, at 102. Interest is payable semiannually on July 1 and January 1. Dion Company uses the straight-line method of amortization for bond premium or discount.

Instructions

Prepare the journal entries to record the following.

a. The issuance of the bonds.
b. The payment of interest and the related amortization on July 1, 2025.
c. The accrual of interest and the related amortization on December 31, 2025.

E13.5 (LO 1) Excel (Entries for Bond Transactions—Effective-Interest) Assume the same information as in E13.4, except that Celine Dion Company uses the effective-interest method of amortization for bond premium or discount. Assume an effective yield of 9.7705%.

Instructions

Prepare the journal entries to record the following. (Round to the nearest dollar.)

a. The issuance of the bonds.
b. The payment of interest and related amortization on July 1, 2025.
c. The accrual of interest and the related amortization on December 31, 2025.

E13.6 (LO 1) (Amortization Schedule—Straight-Line) Devon Harris Company sells 10% bonds having a maturity value of $2,000,000 for $1,855,816. The bonds are dated January 1, 2025, and mature January 1, 2030. Interest is payable annually on January 1.

Instructions

Set up a schedule of interest expense and discount amortization under the straight-line method. (Round answers to the nearest cent.)

E13.7 (LO 1) (Amortization Schedule—Effective-Interest) Assume the same information as in E13.6.

Instructions

Set up a schedule of interest expense and discount amortization under the effective-interest method. (*Hint:* The effective-interest rate must be computed.)

E13.8 (LO 1) Groupwork (Determine Proper Amounts in Account Balances) Presented below are two independent situations.

a. George Gershwin Co. sold $2,000,000 of 10%, 10-year bonds at 104 on January 1, 2025. The bonds were dated January 1, 2025, and pay interest on July 1 and January 1. If Gershwin uses the straight-line method to amortize bond premium or discount, determine the amount of interest expense to be reported on July 1, 2025, and December 31, 2025.

b. Ron Kenoly Inc. issued $600,000 of 9%, 10-year bonds on June 30, 2025, for $562,500. This price provided a yield of 10% on the bonds. Interest is payable semiannually on December 31 and June 30. If Kenoly uses the effective-interest method, determine the amount of interest expense to record if financial statements are issued on October 31, 2025.

E13.9 (LO 1) Groupwork (Entries and Questions for Bond Transactions) On June 30, 2025, Mischa Auer Company issued $4,000,000 face value of 13%, 20-year bonds at $4,300,920, a yield of 12%. Auer uses the effective-interest method to amortize bond premium or discount. The bonds pay semiannual interest on June 30 and -December 31.

Instructions

(Round answers to the nearest cent.)

a. Prepare the journal entries to record the following transactions.

1. The issuance of the bonds on June 30, 2025.

2. The payment of interest and the amortization of the premium on December 31, 2025.

3. The payment of interest and the amortization of the premium on June 30, 2026.

4. The payment of interest and the amortization of the premium on December 31, 2026.

b. Show the proper balance sheet presentation for the liability for bonds payable on the December 31, 2026, balance sheet.

c. Provide the answers to the following questions.

1. What amount of interest expense is reported for 2026?

2. Will the bond interest expense reported in 2026 be the same as, greater than, or less than the amount that would be reported if the straight-line method of amortization were used?

3. Determine the total cost of borrowing over the life of the bond.

4. Will the total bond interest expense for the life of the bond be greater than, the same as, or less than the total interest expense if the straight-line method of amortization were used?

E13.10 (LO 1) (Entries for Bond Transactions) On January 1, 2025, Aumont Company sold 12% bonds having a maturity value of $500,000 for $537,907.37, which provides the bondholders with a 10% yield. The bonds are dated January 1, 2025, and mature January 1, 2030, with interest payable December 31 of each year. Aumont Company allocates interest and unamortized discount or premium on the effective-interest basis.

Instructions

(Round answers to the nearest cent.)

a. Prepare the journal entry at the date of the bond issuance.

b. Prepare a schedule of interest expense and bond amortization for 2025–2027.

c. Prepare the journal entry to record the interest payment and the amortization for 2025.

d. Prepare the journal entry to record the interest payment and the amortization for 2027.

E13.11 (LO 1) (Information Related to Various Bond Issues) Karen Austin Inc. has issued three types of debt on January 1, 2025, the start of the company's fiscal year.

a. $10 million, 10-year, 15% unsecured bonds, interest payable quarterly. Bonds were priced to yield 12%.

b. $25 million par of 10-year, zero-coupon bonds at a price to yield 12% per year.

c. $20 million, 10-year, 10% mortgage bonds, interest payable annually to yield 12%.

Instructions

Prepare a schedule that identifies the following items for each bond: (1) maturity value, (2) number of interest periods over life of bond, (3) stated rate per each interest period, (4) effective-interest rate per each interest period, (5) payment amount per period, and (6) present value of bonds at date of issue.

E13.12 (LO 1, 2) (Entry for Redemption of Bond) On January 2, 2020, Banno Corporation issued $1,500,000 of 10% bonds at 97 due December 31, 2029. Interest on the bonds is payable annually each December 31. The discount on the bonds is also being amortized on a straight-line basis over the 10 years. (Straight-line is not materially different in effect from the preferable "interest method.")

The bonds are callable at 101 (i.e., at 101% of face value), and on January 2, 2025, Banno called $900,000 face value of the bonds and redeemed them.

Instructions

Ignoring income taxes, compute the amount of loss, if any, to be recognized by Banno as a result of retiring the $900,000 of bonds in 2025 and prepare the journal entry to record the redemption.

(AICPA adapted)

E13.13 (LO 1, 2) (Entries for Redemption and Issuance of Bonds) Matt Perry, Inc. had outstanding $6,000,000 of 11% bonds (interest payable July 31 and January 31) due in 10 years. On July 1, it issued $9,000,000 of 10%, 15-year bonds (interest payable July 1 and January 1) at 98. A portion of the proceeds was used to call the 11% bonds (with unamortized discount of $120,000) at 102 on August 1.

Instructions

Prepare the journal entries necessary to record issue of the new bonds and the refunding of the bonds.

E13.14 (LO 1, 2) (Entries for Redemption and Issuance of Bonds) On June 30, 2017, County Company issued 12% bonds with a par value of $800,000 due in 20 years. They were issued at 98 and were callable at 104 at any date after June 30, 2025. Because of lower interest rates and a significant change in the company's credit rating, it was decided to call the entire issue on June 30, 2026, and to issue new bonds. New 10% bonds were sold in the amount of $1,000,000 at 102; they mature in 20 years. County Company uses straight-line amortization. Interest payment dates are December 31 and June 30.

Instructions

a. Prepare journal entries to record the redemption of the old issue and the sale of the new issue on June 30, 2026.

b. Prepare the entry required on December 31, 2026, to record the payment of the first 6 months' interest and the amortization of premium on the bonds.

E13.15 (LO 1, 2) (Entries for Redemption and Issuance of Bonds) Day Company had bonds outstanding with a maturity value of $300,000. On April 30, 2025, when these bonds had an unamortized discount of $10,000, they were called in at 104. To pay for these bonds, Day had issued other bonds a month earlier bearing a lower interest rate. The newly issued bonds had a life of 10 years. The new bonds were issued at 103 (face value $300,000).

Instructions

Ignoring interest, compute the gain or loss and prepare the two entries record this refunding transaction.

(AICPA adapted)

E13.16 (LO 3) (Entries for Zero-Interest-Bearing Notes) On January 1, 2025, Carter Company makes the two following acquisitions.

1. Purchases land having a fair value of $200,000 by issuing a 5-year, zero-interest-bearing promissory note in the face amount of $337,012.
2. Purchases equipment by issuing a 6%, 8-year promissory note having a maturity value of $250,000 (interest payable annually).

The company has to pay 11% interest for funds from its bank.

Instructions

(Round answers to the nearest cent.)

a. Record the two journal entries that should be recorded by Carter Company for the two purchases on January 1, 2025.

b. Record the interest at the end of the first year on both notes using the effective-interest method.

E13.17 (LO 3) (Imputation of Interest) Presented below are two independent situations.

a. On January 1, 2025, Wright Inc. purchased land that had an assessed value of $350,000 at the time of purchase. A $550,000, zero-interest-bearing note due January 1, 2028, was given in exchange. There was no established exchange price for the land, nor a ready fair value for the note. The interest rate charged on a note of this type is 12%. Determine at what amount the land should be recorded at January 1, 2025, and the interest expense to be reported in 2025 related to this transaction.

b. On January 1, 2025, Field Furniture borrowed $5,000,000 (face value) from Sinise Co., a major customer, through a zero-interest-bearing note due in 4 years. Because the note was zero-interest-bearing, Field Furniture agreed to sell furniture to this customer at lower than market price. A 10% rate of interest is normally charged on this type of loan. Prepare the journal entry to record this transaction and determine the amount of interest expense to report for 2025.

E13.18 (LO 3) (Imputation of Interest with Right) On January 1, 2025, Avery Co. borrowed and received $400,000 from a major customer evidenced by a zero-interest-bearing note due in 3 years. As consideration for the zero-interest-bearing feature, Avery agrees to supply the customer's inventory needs for the loan period at lower than the market price. The appropriate rate at which to impute interest is 8%.

Instructions

a. Prepare the journal entry to record the initial transaction on January 1, 2025. (Round all computations to the nearest dollar.)

b. Prepare the journal entry to record any adjusting entries needed at December 31, 2025. Assume that the sales of Avery's product to this customer occur evenly over the 3-year period.

E13.19 (LO 4) (Fair Value Option) Fallen Company commonly issues long-term notes payable to its various lenders. Fallen has had a pretty good credit rating such that its effective borrowing rate is quite low (less than 8% on an annual basis). Fallen has elected to use the fair value option for the long-term notes issued to Barclay's Bank and has the following data related to the carrying and fair value for these notes. Any changes in fair value are due to changes in market rates, not credit risk.

	Carrying Value	Fair Value
December 31, 2025	$54,000	$54,000
December 31, 2026	44,000	42,500
December 31, 2027	36,000	38,000

Instructions

a. Prepare the journal entry at December 31 (Fallen's year-end) for 2025, 2026, and 2027, to record the fair value option for these notes.

b. At what amount will the note be reported on Fallen's 2026 balance sheet?

c. What is the effect of recording the fair value option on these notes on Fallen's 2027 net income?

d. Assuming that general market interest rates have been stable over the period, does the fair value data for the notes indicate that Fallen's creditworthiness has improved or declined in 2027? Explain.

E13.20 (LO 4) (Long-Term Debt Disclosure) At December 31, 2025, Redmond Company has outstanding three long-term debt issues. The first is a $2,000,000 note payable which matures June 30, 2028. The second is a $6,000,000 bond issue which matures September 30, 2029. The third is a $12,500,000 sinking fund debenture with annual sinking fund payments of $2,500,000 in each of the years 2027 through 2031.

Instructions

Prepare the required note disclosure for the long-term debt at December 31, 2025.

***E13.21 (LO 5) (Settlement of Debt)** Strickland Company owes $200,000 plus $18,000 of accrued interest to Moran State Bank. The debt is a 10-year, 10% note. During 2025, Strickland's business deteriorated due to a faltering regional economy. On December 31, 2025, Moran State Bank agrees to accept an old machine and cancel the entire debt. The machine has a cost of $390,000, accumulated depreciation of $221,000, and a fair value of $180,000.

Instructions

a. Prepare journal entries for Strickland Company and Moran State Bank to record this debt settlement.

b. How should Strickland report the gain or loss on the disposition of machine and on restructuring of debt in its 2025 income statement?

c. Assume that, instead of transferring the machine, Strickland decides to grant 15,000 shares of its common stock ($10 par) which has a fair value of $180,000 in full settlement of the loan obligation. If Moran State Bank treats Strickland's stock as a trading investment, prepare the entries to record the transaction for both parties.

***E13.22 (LO 5) (Term Modification without Gain—Debtor's Entries)** On December 31, 2025, American Bank enters into a debt restructuring agreement with Barkley Company, which is now

experiencing financial trouble. The bank agrees to restructure a 12%, issued at par, $3,000,000 note receivable by the following modifications:

1. Reducing the principal obligation from $3,000,000 to $2,400,000.
2. Extending the maturity date from December 31, 2025, to January 1, 2029.
3. Reducing the interest rate from 12% to 10%.

Barkley pays interest at the end of each year. On January 1, 2029, Barkley Company pays $2,400,000 in cash to American Bank.

Instructions

a. Will the gain recorded by Barkley be equal to the loss recorded by American Bank under the debt restructuring? Explain.

b. Can Barkley Company record a gain under the term modification mentioned above? Explain.

c. Assuming that the interest rate Barkley should use to compute interest expense in future periods is 1.4276%, prepare the interest payment schedule of the note for Barkley Company after the debt restructuring.

d. Prepare the interest payment entry for Barkley Company on December 31, 2027.

e. What entry should Barkley make on January 1, 2029?

***E13.23 (LO 5) (Term Modification without Gain—Creditor's Entries)** Using the same information as in E13.22, answer the following questions related to American Bank (creditor).

Instructions

a. What interest rate should American Bank use to calculate the loss on the debt restructuring?

b. Compute the loss that American Bank will suffer from the debt restructuring. Prepare the journal entry to record the loss.

c. Prepare the interest receipt schedule for American Bank after the debt restructuring.

d. Prepare the interest receipt entry for American Bank on December 31, 2027.

e. What entry should American Bank make on January 1, 2029?

***E13.24 (LO 5) (Term Modification with Gain—Debtor's Entries)** Use the same information as in E13.22 above except that American Bank reduced the principal to $1,900,000 rather than $2,400,000. On January 1, 2029, Barkley pays $1,900,000 in cash to American Bank for the principal.

Instructions

a. Can Barkley Company record a gain under this term modification? If yes, compute the gain for Barkley Company.

b. Prepare the journal entries to record the gain on Barkley's books.

c. What interest rate should Barkley use to compute its interest expense in future periods? Will your answer be the same as in E13.22 above? Why or why not?

d. Prepare the interest payment schedule of the note for Barkley Company after the debt restructuring.

e. Prepare the interest payment entries for Barkley Company on December 31, of 2026, 2027, and 2028.

f. What entry should Barkley make on January 1, 2029?

***E13.25 (LO 5) (Term Modification with Gain—Creditor's Entries)** Using the same information as in E13.22 and E13.24, answer the following questions related to American Bank (creditor).

Instructions

a. Compute the loss American Bank will suffer under this new term modification. Prepare the journal entry to record the loss on American's books.

b. Prepare the interest receipt schedule for American Bank after the debt restructuring.

c. Prepare the interest receipt entry for American Bank on December 31, 2026, 2027, and 2028.

d. What entry should American Bank make on January 1, 2029?

***E13.26 (LO 5) (Debtor/Creditor Entries for Settlement of Troubled Debt)** Gottlieb Co. owes $199,800 to Ceballos Inc. The debt is a 10-year, 11% note. Because Gottlieb Co. is in financial trouble, Ceballos Inc. agrees to accept some land and cancel the entire debt. The property has a book value of $90,000 and a fair value of $140,000.

Instructions

a. Prepare the journal entry on Gottlieb's books for debt restructure.

b. Prepare the journal entry on Ceballos's books for debt restructure.

*E13.27 (LO 5) **(Debtor/Creditor Entries for Modification of Troubled Debt)** Vargo Corp. owes $270,000 to First Trust. The debt is a 10-year, 12% note due December 31, 2025. Because Vargo Corp. is in financial trouble, First Trust agrees to extend the maturity date to December 31, 2027, reduce the principal to $220,000, and reduce the interest rate to 5%, payable annually on December 31.

Instructions

a. Prepare the journal entries on Vargo's books on December 31, 2025, 2026, 2027.

b. Prepare the journal entries on First Trust's books on December 31, 2025, 2026, 2027.

Problems

P13.1 (LO 1) Groupwork **(Analysis of Amortization Schedule and Interest Entries)** The following amortization and interest schedule reflects the issuance of 10-year bonds by Capulet Corporation on January 1, 2019, and the subsequent interest payments and charges. The company's year-end is December 31, and financial statements are prepared once yearly.

Amortization Schedule

Year	Cash	Interest	Amount Unamortized	Carrying Value
1/1/2019			$5,651	$94,349
2019	$11,000	$11,322	5,329	94,671
2020	11,000	11,361	4,968	95,032
2021	11,000	11,404	4,564	95,436
2022	11,000	11,452	4,112	95,888
2023	11,000	11,507	3,605	96,395
2024	11,000	11,567	3,038	96,962
2025	11,000	11,635	2,403	97,597
2026	11,000	11,712	1,691	98,309
2027	11,000	11,797	894	99,106
2028	11,000	11,894		100,000

Instructions

a. Indicate whether the bonds were issued at a premium or a discount and how you can determine this fact from the schedule.

b. Indicate whether the amortization schedule is based on the straight-line method or the effective-interest method, and how you can determine which method is used.

c. Determine the stated interest rate and the effective-interest rate.

d. On the basis of the schedule above, prepare the journal entry to record the issuance of the bonds on January 1, 2019.

e. On the basis of the schedule above, prepare the journal entry or entries to record the bond transactions and accruals for 2019. (Interest is paid January 1.)

f. On the basis of the schedule above, prepare the journal entry or entries to record the bond transactions and accruals for 2026. Capulet Corporation does not use reversing entries.

P13.2 (LO 1, 2) Excel **(Issuance and Redemption of Bonds)** Venezuela Co. is building a new hockey arena at a cost of $2,500,000. It received a downpayment of $500,000 from local businesses to support the project, and now needs to borrow $2,000,000 to complete the project. It therefore decides to issue $2,000,000 of 10.5%, 10-year bonds. These bonds were issued on January 1, 2024, and pay interest annually on each January 1. The bonds yield 10%.

Instructions

a. Prepare the journal entry to record the issuance of the bonds on January 1, 2024.

b. Prepare a bond amortization schedule up to and including January 1, 2028, using the effective-interest method.

c. Assume that on July 1, 2027, Venezuela Co. redeems half of the bonds at a cost of $1,065,000 plus accrued interest. Prepare the journal entry to record this redemption.

P13.3 (LO 1, 3) (Negative Amortization) Good-Deal Inc. developed a new sales gimmick to help sell its inventory of new automobiles. Because many new car buyers need financing, Good-Deal offered a low downpayment and low car payments for the first year after purchase. It believes that this promotion will bring in some new buyers.

On January 1, 2025, a customer purchased a new $33,000 automobile, making a downpayment of $1,000. The customer signed a note indicating that the annual rate of interest would be 8% and that quarterly payments would be made over 3 years. For the first year, Good-Deal required a $400 quarterly payment to be made on April 1, July 1, October 1, and January 1, 2026. After this one-year period, the customer was required to make regular quarterly payments that would pay off the loan as of January 1, 2028.

Instructions

a. Prepare a note amortization schedule for the first year.

b. Indicate the amount the customer owes on the contract at the end of the first year.

c. Compute the amount of the new quarterly payments.

d. Prepare a note amortization schedule for these new payments for the next 2 years.

e. What do you think of the new sales promotion used by Good-Deal?

P13.4 (LO 1, 2, 4) (Issuance and Redemption of Bonds; Income Statement Presentation) Holiday Company issued its 9%, 25-year mortgage bonds in the principal amount of $3,000,000 on January 2, 2011, at a discount of $150,000, which it proceeded to amortize by charges to expense over the life of the issue on a straight-line basis. The indenture securing the issue provided that the bonds could be called for redemption in total but not in part at any time before maturity at 104% of the principal amount, but it did not provide for any sinking fund.

On December 18, 2025, the company issued its 11%, 20-year debenture bonds in the principal amount of $4,000,000 at 102, and the proceeds were used to redeem the 9%, 25-year mortgage bonds on January 2, 2026. The indenture securing the new issue did not provide for any sinking fund or for redemption before maturity.

Instructions

a. Prepare journal entries to record the issuance of the 11% bonds and the redemption of the 9% bonds.

b. Indicate the income statement treatment of the gain or loss from redemption and the note disclosure required.

P13.5 (LO 1, 2) Excel (Comprehensive Bond Problem) In each of the following independent cases, the company closes its books on December 31.

1. Sanford Co. sells $500,000 of 10% bonds on March 1, 2025. The bonds pay interest on September 1 and March 1. The due date of the bonds is September 1, 2028. The bonds yield 12%. Give entries through December 31, 2026.
2. Titania Co. sells $400,000 of 12% bonds on June 1, 2025. The bonds pay interest on December 1 and June 1. The due date of the bonds is June 1, 2029. The bonds yield 10%. On October 1, 2026, Titania buys back $120,000 worth of bonds for $126,000 (includes accrued interest). Give entries through December 1, 2027.

Instructions

For the two cases prepare all of the relevant journal entries from the time of sale until the date indicated. Use the effective-interest method for discount and premium amortization (construct amortization tables where applicable). Amortize premium or discount on interest dates and at year-end. (Assume that no reversing entries were made.)

P13.6 (LO 1, 2) Groupwork (Issuance of Bonds between Interest Dates, Straight-Line, Redemption) Presented below are selected transactions on the books of Simonson Corporation.

May 1, 2025	Bonds payable with a par value of $900,000, which are dated January 1, 2025, are sold at 106 plus accrued interest. They are coupon bonds, bear interest at 12% (payable annually at January 1), and mature January 1, 2035. (Use the Interest Expense account for accrued interest.)
Dec. 31, 2025	Adjusting entries are made to record the accrued interest on the bonds, and the amortization of the proper amount of premium. (Use straight-line amortization.)
Jan. 1, 2026	Interest on the bonds is paid.

April 1, 2026	Bonds with par value of $360,000 are called at 102 plus accrued interest, and redeemed. (Bond premium is to be amortized only at the end of each year.)
Dec. 31, 2026	Adjusting entries are made to record the accrued interest on the bonds, and the proper amount of premium amortized.

Instructions

(Round to two decimal places.)
Prepare journal entries for the transactions above.

P13.7 (LO 1, 2) (Entries for Life Cycle of Bonds) On April 1, 2025, Seminole Company sold 15,000 of its 11%, 15-year, $1,000 face value bonds at 97. Interest payment dates are April 1 and October 1, and the company uses the straight-line method of bond discount amortization. On March 1, 2026, Seminole took advantage of favorable prices of its stock to extinguish 6,000 of the bonds by issuing 200,000 shares of its $10 par value common stock. At this time, the accrued interest was paid in cash. The company's stock was selling for $31 per share on March 1, 2026.

Instructions

Prepare the journal entries needed on the books of Seminole Company to record the following.

a. April 1, 2025: issuance of the bonds.

b. October 1, 2025: payment of semiannual interest.

c. December 31, 2025: accrual of interest expense.

d. March 1, 2026: extinguishment of 6,000 bonds. (No reversing entries made.)

P13.8 (LO 3) (Entries for Zero-Interest-Bearing Note) On December 31, 2025, Faital Company acquired a computer from Plato Corporation by issuing a $600,000 zero-interest-bearing note, payable in full on December 31, 2029. Faital Company's credit rating permits it to borrow funds from its several lines of credit at 10%. The computer is expected to have a 5-year life and a $70,000 salvage value.

Instructions

(Round answers to the nearest cent.)

a. Prepare the journal entry for the purchase on December 31, 2025.

b. Prepare any necessary adjusting entries relative to depreciation (use straight-line) and amortization (use effective-interest method) on December 31, 2026.

c. Prepare any necessary adjusting entries relative to depreciation and amortization on December 31, 2027.

P13.9 (LO 3) (Entries for Zero-Interest-Bearing Note; Payable in Installments) Sabonis Cosmetics Co. purchased machinery on December 31, 2024, paying $50,000 down and agreeing to pay the balance in four equal installments of $40,000 payable each December 31. An assumed interest of 8% is implicit in the purchase price.

Instructions

Prepare the journal entries that would be recorded for the purchase and for the payments and interest on the following dates. (Round answers to the nearest cent.)

a. December 31, 2024.

b. December 31, 2025.

c. December 31, 2026.

d. December 31, 2027.

e. December 31, 2028.

P13.10 (LO 1, 2, 4) Groupwork (Comprehensive Problem: Issuance, Classification, Reporting) The following are four independent situations.

a. On March 1, 2026, Wilke Co. issued at 103 plus accrued interest $4,000,000, 9% bonds. The bonds are dated January 1, 2026, and pay interest semiannually on July 1 and January 1. In addition, Wilke Co. incurred $27,000 of bond issuance costs. Compute the net amount of cash received by Wilke Co. as a result of the issuance of these bonds.

b. On January 1, 2025, Langley Co. issued 9% bonds with a face value of $700,000 for $656,992 to yield 10%. The bonds are dated January 1, 2025, and pay interest annually. What amount is reported for interest expense in 2025 related to these bonds, assuming that Langley used the effective-interest method for amortizing bond premium and discount?

c. Tweedie Building Co. has a number of long-term bonds outstanding at December 31, 2025. These long-term bonds have the following sinking fund requirements and maturities for the next 6 years.

	Sinking Fund	Maturities
2026	$300,000	$100,000
2027	100,000	250,000
2028	100,000	100,000
2029	200,000	—
2030	200,000	150,000
2031	200,000	100,000

Indicate how this information should be reported in the financial statements at December 31, 2025.

d. In the long-term debt structure of Beckford Inc., the following three bonds were reported: mortgage bonds payable $10,000,000; collateral trust bonds $5,000,000; bonds maturing in installments, secured by plant equipment $4,000,000. Determine the total amount, if any, of debenture bonds outstanding.

P13.11 (LO1) Writing (Effective-Interest Method) Samantha Cordelia, an intermediate accounting student, is having difficulty amortizing bond premiums and discounts using the effective-interest method. Furthermore, she cannot understand why GAAP requires that this method be used instead of the straight-line method. She has come to you with the following problem, looking for help.

On June 30, 2025, Hobart Company issued $2,000,000 face value of 11%, 20-year bonds at $2,171,600, a yield of 10%. Hobart Company uses the effective-interest method to amortize bond premiums or discounts. The bonds pay semiannual interest on June 30 and December 31. Prepare an amortization schedule for four periods.

Instructions

Using the data above for illustrative purposes, write a short memo (1–1.5 pages double-spaced) to Samantha, explaining what the effective-interest method is, why it is preferable, and how it is computed. (Do not forget to include an amortization schedule, referring to it whenever necessary.)

***P13.12 (LO 5) (Debtor/Creditor Entries for Continuation of Troubled Debt)** Daniel Perkins is the sole shareholder of Perkins Inc., which is currently under protection of the U.S. bankruptcy court. As a "debtor in possession," he has negotiated the following revised loan agreement with United Bank. Perkins Inc.'s $600,000, 12%, 10-year note was refinanced with a $600,000, 5%, 10-year note.

Instructions

a. What is the accounting nature of this transaction?

b. Prepare the journal entry to record this refinancing:

1. On the books of Perkins Inc.

2. On the books of United Bank.

c. Discuss whether generally accepted accounting principles provide the proper information useful to managers and investors in this situation.

***P13.13 (LO 5) (Restructure of Note Under Different Circumstances)** Halvor Corporation is having financial difficulty and therefore has asked Frontenac National Bank to restructure its $5 million note outstanding. The present note has 3 years remaining and pays a current rate of interest of 10%. The present market rate for a loan of this nature is 12%. The note was issued at its face value.

Instructions

The following are four independent situations. Prepare the journal entry that Halvor and Frontenac National Bank would make for each of these restructurings.

a. Frontenac National Bank agrees to take an equity interest in Halvor by accepting common stock valued at $3,700,000 in exchange for relinquishing its claim on this note. The common stock has a par value of $1,700,000.

b. Frontenac National Bank agrees to accept land in exchange for relinquishing its claim on this note. The land has a book value of $3,250,000 and a fair value of $4,000,000.

c. Frontenac National Bank agrees to modify the terms of the note, indicating that Halvor does not have to pay any interest on the note over the 3-year period.

d. Frontenac National Bank agrees to reduce the principal balance due to $4,166,667 and require interest only in the second and third year at a rate of 10%.

***P13.14 (LO 5) (Debtor/Creditor Entries for Continuation of Troubled Debt with New Effective Interest)** Crocker Corp. owes D. Yaeger Corp. a 10-year, 10% note in the amount of $330,000 plus $33,000 of accrued interest. The note is due today, December 31, 2025. Because Crocker Corp. is in

financial trouble, D. Yaeger Corp. agrees to forgive the accrued interest, $30,000 of the principal, and to extend the maturity date to December 31, 2028. Interest at 10% of revised principal will continue to be due on 12/31 each year.

Assume the following present value factors for 3 periods.

	2¼%	2⅜%	2½%	2⅝%	2¾%	3%
Single sum	.93543	.93201	.92859	.92521	.92184	.91514
Ordinary annuity of 1	2.86989	2.86295	2.85602	2.84913	2.84226	2.82861

Instructions

a. Compute the new effective-interest rate for Crocker Corp. following restructure. (*Hint:* Find the interest rate that establishes approximately $363,000 as the present value of the total future cash flows.)

b. Prepare a schedule of debt reduction and interest expense for the years 2025 through 2028.

c. Compute the gain or loss for D. Yaeger Corp. and prepare a schedule of receivable reduction and interest revenue for the years 2025 through 2028.

d. Prepare all the necessary journal entries on the books of Crocker Corp. for the years 2025, 2026, and 2027.

e. Prepare all the necessary journal entries on the books of D. Yaeger Corp. for the years 2025, 2026, and 2027.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ13.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's 2020 financial statements and the accompanying notes to answer the following questions.

a. What cash outflow obligations related to the repayment of long-term debt does P&G have over the next 5 years?

b. P&G indicates that it believes that it has the ability to meet business requirements in the foreseeable future. Prepare an assessment of its liquidity, solvency, and financial flexibility using ratio analysis.

Comparative Analysis Case: The Coca-Cola Company and PepsiCo Inc.

UYJ13.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. Compute the debt to assets and the times interest earned ratios for these two companies. Comment on the quality of these two ratios for both Coca-Cola and PepsiCo.

b. What is the difference between the fair value and the historical cost (carrying amount) of each company's debt at year-end 2020? Why might a difference exist in these two amounts?

c. Both companies have debt issued in foreign countries. Speculate as to why these companies may use foreign debt to finance their operations. What risks are involved in this strategy, and how might they adjust for this risk?

Financial Statement Analysis Case: Commonwealth Edison Co.

UYJ13.3 The following article appeared in the *Wall Street Journal*.

Giant Commonwealth Edison Issue Hits Resale Market With $70 Million Left Over

NEW YORK—Commonwealth Edison Co.'s slow-selling new $9^{1/4}$% bonds were tossed onto the resale market at a reduced price with about $70 million still available from the $200 million offered Thursday, dealers said.

The Chicago utility's bonds, rated double-A by Moody's and double-A-minus by Standard & Poor's, originally had been priced at 99.803, to yield 9.3% in 5 years. They were marked down yesterday the equivalent of about $5.50 for each $1,000 face amount, to about 99.25, where their yield jumped to 9.45%.

Instructions

a. How will the development above affect the accounting for **Commonwealth Edison**'s bond issue?

b. Provide several possible explanations for the markdown and the slow sale of Commonwealth Edison's bonds.

Accounting, Analysis, and Principles

UYJ13.4 The following information is taken from the 2025 annual report of Bugant, Inc. Bugant's fiscal year ends December 31 of each year. Bugant's December 31, 2025, balance sheet is as follows.

Bugant, Inc. Balance Sheet December 31, 2025	
Assets	
Cash	$ 450
Inventory	1,800
Total current assets	2,250
Plant and equipment	2,000
Accumulated depreciation	(160)
Total assets	$4,090
Liabilities	
Bonds payable (net of discount)	$1,426
Stockholders' equity	
Common stock	1,500
Retained earnings	1,164
Total liabilities and stockholders' equity	$4,090

Note X: Long Term Debt:
On January 1, 2024, Bugant issued bonds with face value of $1,500 and a coupon rate equal to 10%. The bonds were issued to yield 12% and mature on January 1, 2029.

Additional information concerning 2026 is as follows.

1. Sales were $3,500, all for cash.
2. Purchases were $2,000, all paid in cash.
3. Salaries were $700, all paid in cash.
4. Property, plant, and equipment was originally purchased for $2,000 and is depreciated straight-line over a 25-year life with no salvage value.
5. Ending inventory was $1,900.
6. Cash dividends of $100 were declared and paid by Bugant.
7. Ignore taxes.
8. The market rate of interest on bonds of similar risk was 12% during all of 2026.
9. Interest on the bonds is paid semiannually each June 30 and December 31.

Accounting

Prepare a balance sheet for Bugant, Inc. at December 31, 2026, and an income statement for the year ending December 31, 2026. Assume semiannual compounding of the bond interest.

Analysis

Use common ratios for analysis of long-term debt to assess Bugant's long-run solvency. Has Bugant's solvency changed much from 2025 to 2026? Bugant's net income in 2025 was $550 and interest expense was $169.

Principles

The FASB and the IASB allow companies the option of recognizing in their financial statements the fair values of their long-term debt. That is, companies have the option to change the balance sheet value of their long-term debt to the debt's fair value and report the change in value as a gain or loss in income. In terms of the qualitative characteristics of accounting information (Chapter 1), briefly describe the potential trade-off(s) involved in reporting long-term debt at its fair value.

Developing Your Professional Skills

Critical-Thinking Cases

CT13.1 (LO 1, 4) (Bond Theory: Balance Sheet Presentations, Interest Rate, Premium) On January 1, 2025, Nichols Company issued for $1,085,800 its 20-year, 11% bonds that have a maturity value of $1,000,000 and pay interest semiannually on January 1 and July 1. The following are three presentations of the long-term liability section of the balance sheet that might be used for these bonds at the issue date.

1. Bonds payable (maturing January 1, 2045)	$1,000,000
Unamortized premium on bonds payable	85,800
Total bond liability	$1,085,800
2. Bonds payable—principal (face value $1,000,000 maturing January 1, 2045)	$ 142,050[a]
Bonds payable—interest (semiannual payment $55,000)	943,750[b]
Total bond liability	$1,085,800
3. Bonds payable—principal (maturing January 1, 2045)	$1,000,000
Bonds payable—interest ($55,000 per period for 40 periods)	2,200,000
Total bond liability	$3,200,000

[a]The present value of $1,000,000 due at the end of 40 (6-month) periods at the yield rate of 5% per period.
[b]The present value of $55,000 per period for 40 (6-month) periods at the yield rate of 5% per period.

Instructions

a. Discuss the conceptual merit(s) of each of the date-of-issue balance sheet presentations shown above for these bonds.

b. Explain why investors would pay $1,085,800 for bonds that have a maturity value of only $1,000,000.

c. Assuming that a discount rate is needed to compute the carrying value of the obligations arising from a bond issue at any date during the life of the bonds, discuss the conceptual merit(s) of using for this purpose:

1. The coupon or nominal rate.

2. The effective or yield rate at date of issue.

d. If the obligations arising from these bonds are to be carried at their present value computed by means of the current market rate of interest, how would the bond valuation at dates subsequent to the date of issue be affected by an increase or a decrease in the market rate of interest?

(AICPA adapted)

CT13.2 (LO 1, 2, 4) (Bond Theory: Price, Presentation, and Redemption) On March 1, 2025, Sealy Company sold its 5-year, $1,000 face value, 9% bonds dated March 1, 2025, at an effective annual interest rate (yield) of 11%. Interest is payable semiannually, and the first interest payment date is September 1, 2025. Sealy uses the effective-interest method of amortization. The bonds can be called by Sealy at 101 at any time on or after March 1, 2026.

Instructions

a. **1.** How would the selling price of the bond be determined?

2. Specify how all items related to the bonds would be presented in a balance sheet prepared immediately after the bond issue was sold.

b. What items related to the bond issue would be included in Sealy's 2025 income statement, and how would each be determined?

c. Would the amount of bond discount amortization using the effective-interest method of amortization be lower in the second or third year of the life of the bond issue? Why?

d. Assuming that the bonds were called in and redeemed on March 1, 2026, how should Sealy report the redemption of the bonds on the 2026 income statement?

(AICPA adapted)

CT13.3 (LO 1, 2, 4) Writing (Bond Theory: Amortization and Gain or Loss Recognition)

Part I: The appropriate method of amortizing a premium or discount on issuance of bonds is the effective-interest method.

Instructions

a. What is the effective-interest method of amortization and how is it different from and similar to the straight-line method of amortization?

b. How is amortization computed using the effective-interest method, and why and how do amounts obtained using the effective-interest method differ from amounts computed under the straight-line method?

Part II: Gains or losses from the early extinguishment of debt that is refunded can theoretically be accounted for in three ways:

1. Amortized over remaining life of old debt.

2. Amortized over the life of the new debt issue.

3. Recognized in the period of extinguishment.

Instructions

a. Develop supporting arguments for each of the three theoretical methods of accounting for gains and losses from the early extinguishment of debt.

b. Which of the methods above is generally accepted and how should the appropriate amount of gain or loss be shown in a company's financial statements?

(AICPA adapted)

CT13.4 (LO 4) Writing (Off-Balance-Sheet Financing) Matt Ryan Corporation is interested in building its own soda can manufacturing plant adjacent to its existing plant in Partyville, Kansas. The objective would be to ensure a steady supply of cans at a stable price and to minimize transportation costs. However, the company has been experiencing some financial problems and has been reluctant to borrow any additional cash to fund the project. The company is not concerned with the cash flow problems of making payments, but rather with the impact of adding additional long-term debt to its balance sheet.

The president of Ryan, Andy Newlin, approached the president of the Aluminum Can Company (ACC), its major supplier, to see if some agreement could be reached. ACC was anxious to work out an arrangement, since it seemed inevitable that Ryan would begin its own can production. The Aluminum Can Company could not afford to lose the account.

After some discussion, a two-part plan was worked out. First, ACC was to construct the plant on Ryan's land adjacent to the existing plant. Second, Ryan would sign a 20-year purchase agreement. Under the purchase agreement, Ryan would express its intention to buy all of its cans from ACC, paying a unit price which at normal capacity would cover labor and material, an operating management fee, and the debt service requirements on the plant. The expected unit price, if transportation costs are taken into consideration, is lower than current market. If Ryan did not take enough production in any one year and if the excess cans could not be sold at a high enough price on the open market, Ryan agrees to make up any cash shortfall so that ACC could make the payments on its debt. The bank will be willing to make a 20-year loan for the plant, taking the plant and the purchase agreement as collateral. At the end of 20 years, the plant is to become the property of Ryan.

Instructions

a. What are project financing arrangements using special-purpose entities?

b. What are take-or-pay contracts?

c. Should Ryan record the plant as an asset together with the related obligation?

d. If not, should Ryan record an asset relating to the future commitment?

e. What is meant by off-balance-sheet financing?

CT13.5 (LO 1, 4) Ethics (Bond Issue) Donald Lennon is the president, founder, and majority owner of Wichita Medical Corporation, an emerging medical technology products company. Wichita is in dire need of additional capital to keep operating and to bring several promising products to final development, testing, and production. Donald, as owner of 51% of the outstanding stock, manages the company's operations. He places heavy emphasis on research and development and long-term growth. The other principal stockholder is Nina Friendly who, as a nonemployee investor, owns 40% of the stock. Nina would like to deemphasize the R & D functions and emphasize the marketing function to maximize short-run sales and profits from existing products. She believes this strategy would raise the market price of Wichita's stock.

All of Donald's personal capital and borrowing power is tied up in his 51% stock ownership. He knows that any offering of additional shares of stock will dilute his controlling interest because he won't be able to participate in such an issuance. But, Nina has money and would likely buy enough shares to gain control of Wichita. She then would dictate the company's future direction, even if it meant replacing Donald as president and CEO.

The company already has considerable debt. Raising additional debt will be costly, will adversely affect Wichita's credit rating, and will increase the company's reported losses due to the growth in interest expense. Nina and the other minority stockholders express opposition to the assumption of additional debt, fearing the company will be pushed to the brink of bankruptcy. Wanting to maintain his control and to preserve the direction of "his" company, Donald is doing everything to avoid a stock issuance and is contemplating a large issuance of bonds, even if it means the bonds are issued with a high effective-interest rate.

Instructions

a. Who are the stakeholders in this situation?

b. What are the ethical issues in this case?

c. What would you do if you were Donald?

FASB Codification References

[1] FASB ASC 835-30. [Predecessor literature: "Interest on Receivables and Payables," *Opinions of the Accounting Principles Board No. 21* (New York: AICPA, 1971), par. 15.]

[2] FASB ASC 835-30-55-2. [Predecessor literature: "Interest on Receivables and Payables," *Opinions of the Accounting Principles Board No. 21* (New York: AICPA, 1971), par. 16.]

[3] FASB ASC 835-30-15-3. [Predecessor literature: "Interest on Receivables and Payables," *Opinions of the Accounting Principles Board No. 21* (New York: AICPA, 1971).]

[4] FASB ASC 835-30-05-2. [Predecessor literature: "Interest on Receivables and Payables," *Opinions of the Accounting Principles Board No. 21* (New York: AICPA, 1971), par. 12.]

[5] FASB ASC 825-10-25. [Predecessor literature: "The Fair Value Option for Financial Assets and Liabilities—Including an Amendment to FASB No. 115," *Statement of Financial Accounting Standards No. 159* (Norwalk, Conn.: FASB, 2007).]

[6] FASB ASC 470-10-50-4. [Predecessor literature: "Balance Sheet Classification of Short-Term Obligations Expected to Be Refinanced," *FASB Statement of Financial Accounting Standards No. 6* (Stamford, Conn.: FASB, 1975), par. 15.]

[7] FASB ASC 505-10-50-3. [Predecessor literature: "Disclosure of Information about Capital Structure," *FASB Statement of Financial Accounting Standards No. 129* (Norwalk, Conn.: 1997), par. 4.]

[8] FASB ASC 470-10-50-1. [Predecessor literature: "Disclosure of Long-Term Obligations," *FASB Statement of Financial Accounting Standards No. 47* (Stamford, Conn.: 1981), par. 10.]

[9] FASB ASC 310-40-15-2. [Predecessor literature: "Accounting by Debtors and Creditors for Troubled Debt Restructurings," *FASB Statement No. 15* (Norwalk, Conn.: FASB, June, 1977), par. 1.]

[10] FASB ASC 310-10-35. [Predecessor literature: "Accounting by Creditors for Impairment of a Loan," *FASB Statement No. 114* (Norwalk, Conn.: FASB, May 1993), par. 42.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE13.1 Access the glossary (Master Glossary) to answer the following.

a. What does the term "callable obligation" mean?

b. What is an imputed interest rate?

c. What is a long-term obligation?

d. What is the definition of "effective-interest rate"?

CE13.2 What guidance does the Codification provide on the disclosure of long-term obligations?

CE13.3 Describe how a company would classify debt that includes covenants. What conditions must exist in order to depart from the normal rule?

CE13.4 A company proposes to include in its SEC registration statement a balance sheet showing its subordinate debt as a portion of stockholders' equity. Will the SEC allow this? Why or why not?

Codification Research Case

Wie Company has been operating for just 2 years, producing specialty golf equipment for women golfers. To date, the company has been able to finance its successful operations with investments from its principal owner, Michelle Wie, and cash flows from operations. However, current expansion plans will require some borrowing to expand the company's production line.

As part of the expansion plan, Wie will acquire some used equipment by signing a zero-interest-bearing note. The note has a maturity value of $50,000 and matures in 5 years. A reliable fair value measure for the equipment is not available, given the age and specialty nature of the equipment. As a result, Wie's accounting staff is unable to determine an established exchange price for recording the equipment (nor

the interest rate to be used to record interest expense on the long-term note). They have asked you to conduct some accounting research on this topic.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the authoritative literature that provides guidance on the zero-interest-bearing note. Use some of the examples to explain how the standard applies in this setting.

b. How is present value determined when an established exchange price is not determinable and a note has no ready market? What is the resulting interest rate often called?

c. Where should a discount or premium appear in the financial statements?

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

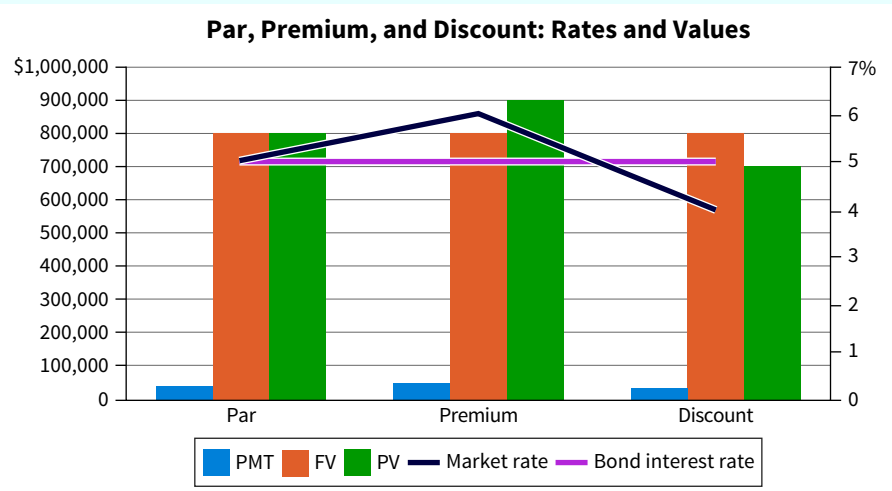
Analytics in Action Activities

Using Data Analytics to Understand the Financial Impact of Bonds over Time

DA13.1 When a company decides to issue bonds, it must consider a variety of factors, including the bond term, interest rate, and face value of the issuance. The value of the bonds will also be affected by the issuing company's credit rating and overall economic factors.

Excel

With so many factors to consider, it is helpful to use a tool like Excel to perform a what-if analysis to calculate the initial value of a bond under different scenarios. For example, the following graph offers an easy visual of the value of bonds issued at par or at a premium or discount.



Required

Using Excel formulas, you will calculate the proceeds of a bond issue under different scenarios, graph the results, and provide insights from your calculations.

Go to Wiley Course Resources for complete details and instructions.

DA13.2 Once a company issues a bond, it needs to understand the financial impact of the bond over time. Using Excel formulas allows us to very quickly create an amortization schedule and even graph the impact of a bond issue through its maturity.

Excel

Required

Provided with the details of a bond issue, you are asked to use Excel formulas to calculate the issue price of the bonds, prepare and graph the bond discount amortization schedule, and then discuss the financial impact of the bond over time.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 6

Compare the accounting procedures for long-term liabilities under GAAP and IFRS.

As indicated in Chapter 12, IFRS and GAAP have similar definitions of liabilities. Following are the key similarities and differences between GAAP and IFRS related to long-term liabilities.

Similarities

- As indicated in our earlier discussions, GAAP and IFRS have similar liability definitions, and liabilities are classified as current and non-current.
- Much of the accounting for bonds and long-term notes is the same for GAAP and IFRS.
- Under GAAP and IFRS, bond issue costs are netted against the carrying amount of the bonds.

Differences

- Under GAAP, companies are permitted to use the straight-line method of amortization for bond discount or premium, provided that the amount recorded is not materially different than that resulting from effective-interest amortization. However, the effective-interest method is preferred and is generally used. Under IFRS, companies must use the effective-interest method.
- Under IFRS, companies do not use premium or discount accounts but instead show the bond at its net amount. For example, if a $100,000 bond was issued at 97, under IFRS a company would record:

Cash	97,000	
Bonds Payable		97,000

- GAAP uses the term *troubled-debt restructurings* and has developed specific guidelines related to that category of loans. IFRS generally assumes that all restructurings will be accounted for as extinguishments of debt.
- IFRS requires a liability and related expense or cost be recognized when a contract is onerous. Under GAAP, losses on onerous contracts are generally not recognized under GAAP unless addressed by industry or transaction-specific requirements.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting*, *IFRS Fourth Edition* exists as another resource.

CHAPTER 14

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Stockholders' Equity

WHAT is stockholders' equity?

Stockholders' equity is the difference between the assets of a company and its liabilities: **Assets − Liabilities = Stockholders' Equity.** Stockholders' equity is often referred to as shareholders' equity, owners' equity, corporate capital, net assets, or simply equity. The components of stockholders' equity are generally as follows.

Common Stock, Preferred Stock, and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income
Amounts raised when an entity issues stock or other equity-classified instruments	Accumulated earnings of an entity in excess of its distribution to its shareholders	Common stock repurchased from an entity's shareholders	Certain transactions and events from nonowner sources

Source: Adapted from KPMG, *Debt and Equity Financing Handbook* (October 2020), p. 316.

WHY is information about stockholders' equity important?

Did you know that **Apple**, **Microsoft**, **Tesla**, and **Amazon** have stock valuations that are often greater than the gross domestic product (GDP) of many countries? With the financial importance of these corporations, investors, creditors, management, and regulators must understand the type of equity financing (common and preferred stock) used, the type of distributions (dividends and treasury stock) made, and the company's use of internal funding through reinvested earnings. Let's take a look at Amazon's recent stockholders' equity section.

Amazon.com, Inc.
Balance Sheet (partial)
For the Year Ended December 31, 2020
(in $ millions, except for per share data)

Stockholders' equity	
Preferred stock, $0.01 par value (authorized shares — 500, issued and outstanding 0)	$ 0
Common stock, $0.01 par value, authorized shares — 5,000 (issued shares 527, outstanding 503)	5
Treasury stock, at cost	(1,837)
Additional paid-in capital	42,865
Accumulated other comprehensive income (loss)	(180)
Retained earnings	52,551
Total stockholders' equity	$93,404

With this information, coupled with other related information in the financial statements, shareholders can determine Amazon's return on stockholders' equity (ROE), which measures profitability from the shareholders' viewpoint. As Amazon grows, its stockholders' equity should also grow, which generally is a good sign of the company's health. In Amazon's case, that is certainly true, even though it is reducing its equity by buying back treasury stock. On the other hand, there is a wide variance between Amazon's book value of stockholders' equity, $93,404 million, and the total fair value of its stock—Amazon's market value on December 31, 2020, was $1,599,153 million! This difference illustrates the value that investors place on nonfinancial measures such as customer satisfaction, innovation, or sustainability efforts.

HOW do we account for components of stockholders' equity?

The issuance of common stock and preferred stock provide the starting point for recording information in stockholders' equity. Stock issued in combination with other securities, stock issued to purchase property or services, and preferred stock that is redeemable or convertible are examples of situations that develop in reporting these transactions. Distributions related to cash dividends, stock dividends, and treasury stock must also be accounted for to ensure that the stockholders' equity section is reported correctly.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 14.1 Describe the corporate form and the issuance of shares of stock.	**14.1 Corporate Capital** • Characteristics of a corporation • Forming a corporation • Components of equity • Common stock • Preferred stock	Examples **14.1** Common Stock **14.2** No-Par Stock **14.3** No-Par Stock with Stated Value **14.4** Proportional Allocation of Proceeds **14.5** Incremental Allocation of Proceeds **14.6** Issuance Costs **14.7** Preferred Stock **14.8** Convertible Preferred Stock Put It into Practice LO 14.1 Record Stock Issuances
LO 14.2 Describe the accounting and reporting for reacquisition of shares.	**14.2 Reacquisition of Shares** • Treasury stock • Purchase • Sale • Retirement	Examples **14.9** Purchase Treasury Stock **14.10** Presentation of Treasury Stock **14.11** Sell Treasury Stock Above Cost **14.12** Sell Treasury Stock Below Cost **14.13** Sell Treasury Stock, Reduce Retained Earnings **14.14** Retire Treasury Stock Put It into Practice LO 14.2 Record Treasury Stock Transactions
LO 14.3 Explain the accounting and reporting issues related to dividends.	**14.3 Dividend Policy** • Financial condition and dividend distributions • Types of dividends • Stock dividends and stock splits	Examples **14.15** Economics of Dividends **14.16** Cash Dividend **14.17** Dividends in Arrears **14.18** Property Dividends **14.19** Liquidating Dividend **14.20** Small Stock Dividend **14.21** Large Stock Dividend Put It into Practice LO 14.3 Record Dividends
LO 14.4 Indicate how to present and analyze stockholders' equity.	**14.4 Presentation and Decision Analysis** • Presentation • Decision analysis	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

14.1 Corporate Capital

LEARNING OBJECTIVE 1

Describe the corporate form and the issuance of shares of stock.

Of the three **primary forms of business organization**—the proprietorship, the partnership, and the corporation—the corporation is by far the leader in terms of the aggregate amount of resources controlled, goods and services produced, and people employed. All of the Fortune 500 largest industrial firms are corporations. Let's take a look at the corporate form and its advantages and disadvantages.

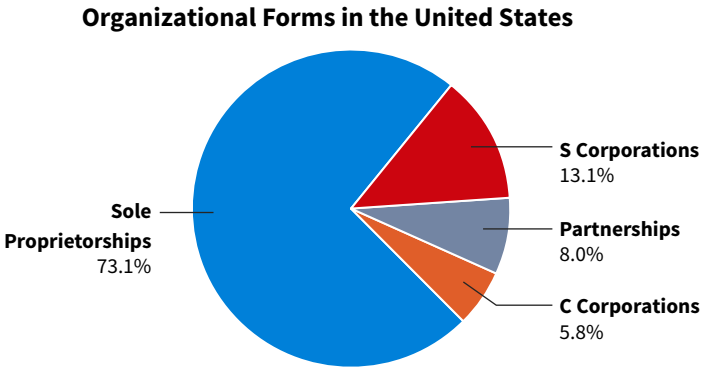
Characteristics of a Corporation

Corporations are either a C corporation or an S corporation. The **C** and **S** are subsections within the Internal Revenue Service (IRS) code used to differentiate these two corporate forms. Corporations like **Exxon**, **General Electric**, and **Home Depot** are C corporations. The main differences between these two forms of ownership are as follows.

- **Taxation**. Stockholders of a C corporation face a double tax. First, a C corporation must pay income tax on its earnings. Second, if the C corporation pays dividends to the stockholders, then the stockholders must pay income tax on the dividends. This results in earnings being taxed at the corporate level and again at the individual stockholder level, a double tax. In an S corporation, the corporation pays no income tax, but the taxable income from the corporation is taxed directly to the S corporation stockholders.
- **Number of stockholders**. A C corporation does not have any restrictions on the number of its stockholders. An S corporation is limited to 100 stockholders.

Illustration 14.1 shows the percentage of organization forms in the United States, including S corporations and C corporations. Note that the sole proprietorship is by far the most popular in the United States (and in the rest of the world). It is typically the first organizational form chosen because it is easy to form and allows the owner to completely control the business.

ILLUSTRATION 14.1
Organizational Forms of Business



Source: *taxfoundation.org* (Census Bureau).

Although Illustration 14.1 indicates that the number of C corporations is small, this form dominates in terms of other measurements. For example, C corporations are the largest in revenues, total assets, and market value. If you calculate the total market capitalization (stock price times number of shares outstanding) of the C corporations in the United States, you would find that it exceeds our GDP. Other statistics demonstrate the size of these corporations:

- **Apple**'s market capitalization of over $2.3 trillion is one-half of Russia's GDP.

- **Microsoft**'s market capitalization of $1.8 trillion is greater than the total GDP of eight Eastern European countries.
- **Amazon**'s market capitalization of $1.6 trillion is greater than the total GDP of nine South American countries.

Advantages of the Corporate Form

Why is the C corporation so popular for large corporations? The answer is that the corporate form has several advantages over other forms of ownership. You probably learned these advantages in your first course in accounting, but **Illustration 14.2** provides a quick summary in case you missed that chapter.

ILLUSTRATION 14.2 Advantages of Corporations

Feature	Explanation
Limited liability	If you invest in a corporation like **Johnson & Johnson**, the most you can generally lose is your investment—the value of your stock. Any losses, debt, negligence, or lawsuits that relate to the corporation are not your responsibility.
Separate legal entity	A corporation acts as a separate party in its own name rather than in the name of its stockholders, one of the main reasons why shareholders have limited liability. Corporations can enter contracts and guarantees, borrow money, and get into legal disputes as a separate entity.
Ease of capital formation	If a company needs to raise capital, it can issue shares of stock. Shareholders can then determine their ownership interest in the company. If a company has one class of shares divided into 1,000 shares and you own 500 shares, you own 50% of the company. If you hold 10 shares, you own 1% of the shares outstanding. Shares trade in marketplaces, and therefore the owner of the shares can determine the value of the shares when needed. A wealth of information is generally available to help investors make their financial decisions about buying or selling shares of stock.
Unlimited life	Because corporations generally have a perpetual life, companies like **Disney**, **Verizon**, or **PayPal** will not be affected by changes in ownership. As a stockholder, you do not need to worry that the corporation will end if the current management is replaced or if other stockholders sell their shares.
Transferability of ownership	Ownership in a corporation is typically easily transferable. If you have shares in **Google**, you may sell them to others without obtaining the consent of the company or other stockholders. Each share is your personal property that you may dispose of as you see fit.
Professional management	Although you may technically own a part of the corporation, it is unlikely that you will be involved in the day-to-day activities of the organization. Professional managers can be hired who have the skill and knowledge to run it. You may not be a microbiologist, but you are able to invest in biotech companies like **Moderna** or **Merck**.

Disadvantages of the Corporate Form

There are also disadvantages to the corporate form, as **Illustration 14.3** indicates.

ILLUSTRATION 14.3 Disadvantages of Corporations

Feature	Explanation
Taxation	As discussed earlier, stockholders are subject to double taxation.
Formation	Forming a corporation requires substantial documentation and is expensive and time-consuming. Also, corporation laws require more formalities in how a corporation is managed. For example, shareholder and director meetings are required in which proper notice must be given and minutes kept. Corporation laws also tend to have stricter recordkeeping requirements.
Regulation	Corporations are heavily regulated by the government. For example, they must report their activities to the state in which incorporated and to the states in which they do business. In addition, the federal government is often involved in issues such as anti-trust, privacy, and environmental concerns.
Separation from management	One of the advantages of a corporation is that professional managers, in coordination with the board of directors, manage the company. Generally, the objectives of the stockholder are the same as management. Unfortunately, management may in some cases use questionable accounting to enhance their compensation or even engage in fraudulent activities.

In addition to classifying corporations as C or S, two common ways to classify corporations are as follows.

1. **Purpose**. A corporation may be organized for the purpose of making a profit, such as **Starbucks**, **Target**, and **Meta Platforms** (previously **Facebook**). Not-for-profit corporations are organized for charitable, medical, or educational purposes, such as the **Salvation Army** and the **American Heart Association**.
2. **Ownership**. Classification by ownership differentiates publicly held and privately held corporations. A **publicly held corporation**, such as **IBM**, **Caterpillar**, and **Apple**, may have thousands of stockholders. Its stock is regularly traded on national securities exchange such as the New York Stock Exchange or NASDAQ. A **privately held corporation** usually has only a few stockholders and does not offer its stock for sale to the general public. Privately held companies tend to be smaller, but **Cargill Inc.** (which trades in grain and other commodities) is one of the largest companies in the United States, and it is privately held.

Forming a Corporation

The corporate organization form seems to have a lot going for it. But how do you go about forming a corporation? Let's look at a company, Snowflake Inc., which wants to incorporate, or form a corporation. It follows this process.

Snowflake submits articles of incorporation in the state in which incorporation is desired. **Articles of incorporation** are a set of legal documents that contain general information about the business, such as name, location, address, names of directors, and areas of operation.

After fulfilling these requirements, the state issues a corporate charter, thereby recognizing Snowflake as a legal entity subject to state law.

The corporate charter is a document that describes the name and purpose of the corporation, the type and number of shares authorized, the names of the individuals who are forming the corporation, and the number of shares these individuals agree to purchase. Regardless of the number of states in which Snowflake has operating divisions, it is incorporated in one state.

Snowflake's headquarters is in San Mateo, California, but it is incorporated in Delaware. Why Delaware? Delaware's annual report to its citizens and stakeholders identifies the three reasons why Snowflake and other companies choose Delaware:

1. **Near total flexibility.** For example, corporate filings are quickly processed and board requirements less stringent.
2. **Lack of structural formalities.** A high level of corporate legal cases in Delaware have led to precedents that lead to less uncertainty regarding outcomes.
3. **Favorable tax advantages.** Delaware has no state income tax.

Delaware's approach is working as evidenced by the following.

- Over 65% of the Fortune 500 largest corporations are incorporated in Delaware. Examples are **Walmart**, **Coca Cola**, **Berkshire Hathaway**, and **General Electric**.

- Over 89% of the companies that had an initial public offering (IPO) recently incorporated in Delaware. Examples are **Uber Technologies**, **Lyft Inc.**, **Pinterest**, and **Slack Technologies**.
- Over 1.5 million entities are incorporated in Delaware, which exceeds its 1 million population![1]

Each state has its own laws governing the incorporation of businesses. The accounting for stockholders' equity follows the provisions of these state laws.

In many cases, states have adopted the principles contained in the Model Business Corporate Act prepared by the American Bar Association. State laws are complex and vary both in their provisions and in their definitions of certain terms. Some laws fail to define technical terms. As a result, terms often mean one thing in one state and another thing in a different state. These problems may be further compounded because legal authorities often interpret the effects and restrictions of the laws differently.

Accounting Matters

Getting In on the Ground Floor

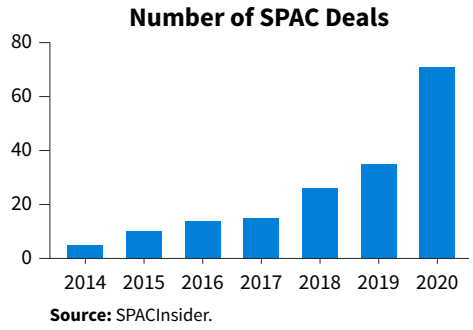
Special purpose acquisition companies (SPACs) are hot. In early 2021, there were over 295 SPAC deals, raising over $93 billion (approximately 70% of all initial public offerings (IPOs)). This continues the steady growth in SPAC activity over the past several years, as shown in the adjacent chart.

What is a SPAC? A SPAC—often referred to as a blank-check company—is a shell company that has a listing on a stock exchange. SPACs provide a way for start-up companies, which generally do not have a good history of operating performance, to gain access to the stock market. When the SPAC and start-up company merge, the start-up is able to go public. In at least 15 recent deals, the start-up company had no revenue in the year before the SPAC transaction. Such financial performance almost always precludes going public through the traditional IPO route.

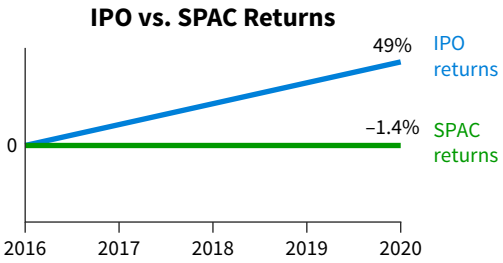
Start-ups going public through SPACs can make rosy projections about future results with less risk of facing lawsuits compared to disclosing those figures in a traditional IPO. In a SPAC, investor groups pool their money and then look for a company that meets their interests. In a number of cases, investing groups include sophisticated hedge fund managers and celebrities like former basketball star Shaquille O'Neal, former speaker of the house Paul Ryan, and singer Ciara.

So what's not to like? SPACs give start-ups a route to an IPO and investors a chance to get in on the ground floor of a promising company. But, the danger for investors is that the rosy projections sometimes do not pan out. For example, **Fisker Inc.**, an electric-car company that went public via a SPAC, recently told investors that it projected revenue of $13.2 billion in 2025. While it has yet to generate any revenue, it has ridden a wave of investor enthusiasm to a market capitalization of more than $4 billion. Or consider **Nikola Corp.**, an electric-truck maker, which had annual revenue of less than $500,000 when it went public via a SPAC. Its shares slid shortly after the transaction, after a short seller accused it of fraud and authorities launched investigations.

Some critics say investing in these so-called blank-check companies may not be worth the risk. In fact, SPACs have a poor record of delivering returns. As shown in the adjacent chart, of 107 SPACs that have gone public since 2015 and executed deals, the average return on their common stock has been a loss of 1.4%. During the same period, the average return of companies that went public via IPOs was 49%. So, the SPAC boom could end badly for smaller investors who do not understand the risks. As one accounting analyst remarked, "These types of very speculative companies should not be sold to retail investors at such an early stage."



Source: SPACInsider.



Source: Renaissance Capital.

Sources: A. Osipovich and D. Michaels, "Investors Flock to SPACs, Where Risks Lurk and Track Records Are Poor," *Wall Street Journal* (November 13, 2020); and P. Eavis and L. Hirsch, "WeWork Will go Public with Help from Merger," *The New York Times* (March 27, 2021).

[1]See *Delaware Secretary of State Annual Report—Statistics for 2019.*

Components of Stockholders' Equity

What makes up stockholders' equity? In your introductory course in accounting, you learned that:

Assets = Liabilities + Stockholders' Equity

or

Assets − Liabilities = Stockholders' Equity

Stockholders' equity is often referred to as shareholders' equity, owners' equity, corporate capital or simply equity. As indicated, stockholders' equity is the difference between the assets and the liabilities of the company. That is, the owners' or stockholders' interest in a company like **The Walt Disney Company** is a **residual interest**.[2] **Stockholders' (owners') equity** represents the cumulative net contributions by stockholders plus retained earnings and accumulated comprehensive income.

As a residual interest, stockholders' equity has no existence apart from the assets and liabilities of Disney—stockholders' equity equals net assets. Stockholders' equity is not a claim to specific assets but a claim against a portion of the total assets. Its amount is not specified or fixed; it depends on Disney's profitability. Stockholders' equity grows if the company is profitable. It shrinks, or may disappear entirely if Disney loses money.

Let's look at the stockholders' equity section of **Paylocity Holding Corporation** (a cloud-based provider of payroll and human capital management software solutions), shown in **Illustration 14.4**, to understand the components of stockholders' equity.

ILLUSTRATION 14.4 Stockholders' Equity Section

Paylocity Holding Corporation
Balance Sheet (partial)
As of June 30, 2020
(in thousands, except per share data)

Preferred stock, $0.001 par value, 5,000 shares authorized, no shares issued and outstanding	$ – 0 –	Contributed capital
Common stock, $0.001 par value, 155,000 shares authorized; 53,792 shares issued and outstanding.	54	Contributed capital
Additional paid-in capital	227,907	Contributed capital
Retained earnings	164,272	Earned capital
Accumulated other comprehensive income	675	Earned capital
Total stockholders' equity	$392,908	

Paylocity stockholders' equity section indicates that it has authorization for both the issuance of preferred stock and common stock. In Paylocity's case, it has not issued any preferred stock at this point but has issued 53,792 shares of common shares. The combination of the preferred stock and the common stock is often referred to as the **capital stock** of the company. In addition, Paylocity has additional paid-in capital of $227,907,000 which indicates when the common stock was issued, it sold above par value. As indicated in Illustration 14.4, the two primary components of stockholders' equity are contributed capital and earned capital.

[2] "Elements of Financial Statements," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: FASB, 1985), par. 60.

The first two categories of equity, capital stock and additional paid-in capital, constitute contributed (paid-in) capital.

- **Contributed (paid-in) capital** is the total amount paid in on capital stock—the amount provided by stockholders to the corporation for use in the business.
- Contributed capital includes items such as the par value of all outstanding stock and additional paid-in capital.

Earned capital is the capital that develops from profitable operations. It consists of all undistributed income that remains invested in the company.

- **Retained earnings** represents the earned capital of the company.
- **Accumulated other comprehensive income** reflects the aggregate amount of the other comprehensive income items. It includes such items as unrealized gains and losses on available-for-sale debt investments and unrealized gains and losses on certain derivative transactions.[3]

Common Stock

Whether it be **Best Buy**, **Columbia Sportswear**, or **Door Dash**, one class of stock in these companies must represent the basic ownership interest. That class is called common stock. **Common stock** is the residual corporate interest that bears the risk of loss and receives the benefit of success. The key characteristics of common stock are shown in **Illustration 14.5**.

ILLUSTRATION 14.5
Characteristics of Common Stock

Characteristic	Description
Voting	Right to vote in election of board of directors at annual meeting and on actions that require stockholder approval.
Residual claim	Owners are paid with assets that remain after all other claims (liabilities) have been paid.
Preemptive right	Right to acquire a proportionate share of new issues of common stock. Without this right, existing stockholders might find their ownership interest reduced, or diluted, by the issuance of additional stock without their knowledge and at prices unfavorable to them.
Term	Common stock is usually perpetual in nature—it generally does not have a maturity or redemption date.
Dividends	The right to receive dividends when approved by the board of directors. Common stockholders' dividends may vary from period to period and are not guaranteed.

If a corporation has only one authorized issue of stock, that issue is common stock, whether so designated in the charter or not. In some cases, companies may offer two or more classes of common stock to grant certain preferences to certain groups of common stockholders. These preferences generally involve voting rights or dividend payments. Many of the dual structures involve technology companies whose founder(s) are reluctant to give up control but need the cash from investors to sustain operations.

For example, the two founders of **Lyft Inc** (the ride-sharing company) were able to maintain control of their company even though the founders owned only 7% of the stock. Lyft created a second class of shares that granted the founders 20 votes for each share owned, in contrast to other investors who only receive one vote per share. Controversy surrounds the

[3]Chapter 16 contains an expanded discussion of accumulated other comprehensive income. Many companies report treasury stock as part of the stockholders' equity section. The accounting and reporting for treasury stock is discussed later in this chapter.

issuance of dual-class stock. Some object to a small group of investors having the voting rights when most of the capital is provided by general stockholders. Others argue that dual-class stock enables investors to invest in high-growth and innovative companies which may lead to superior profits in the long-run.

Accounting Matters — A Class (B) Act

Dual-class shares can be found in approximately 10% of companies' financial statements. **Alphabet**, **Meta Platforms** (previously **Facebook**), and **Under Armour** are three notable companies with multi-tiered shares. Each of the three companies have Class A shares with 1 vote per share, and Class B shares with 10 votes per share. Class A shares trade publicly, while Class B shares do not. In each instance, the company founder(s) control a majority of the vote through holdings in the Class B shares, as shown in the adjacent table.

	% of Class A Shares (Votes) Controlled by Class B Shareholders	Class B Shares Controlled by Founder(s)
Alphabet	60.38%	85.3%
Meta Platforms	64.72%	89.1%
Under Armour	64.62%	64.7%

Some trading exchanges impose rules to protect non-controlling investors. For example, the **Financial Times Stock Exchange (FTSE)** requires family owners to hold no more than 50% of voting shares. For many retail investors, voting rights are not that important. However, investors must carefully compare the apparent bargain prices for some classes of shares—they may end up as second-class citizens with no voting rights.

Sources: 2021 proxy statements for Alphabet, Meta Platforms, and Under Armour.

Issuance of Common Stock

In issuing common stock, companies follow these procedures.

1. The state of incorporation must authorize the stock, generally in a certificate of incorporation or charter. No entry is made in the general ledger accounts when the stock authorization is received from the state.
2. The corporation offers shares for sale, entering into contracts to sell stock.
3. After receiving amounts for the stock, the corporation issues shares and prepares the appropriate journal entries.

Par Value Stock The par value of a stock has no relationship to its fair value. The par value associated with most capital stock issuances is very low. For example, **PepsiCo**'s par value is 1⅔¢, **Hershey**'s is $1, and **Meta Platforms**' is $0.000006.[4]

A company uses two accounts to record the issuance of common stock:

1. **Common Stock**. This account reflects the par value of issued shares. A company credits this account when it originally issues the shares. It makes no additional entries in this account unless it issues additional shares or retires them.
2. **Paid-in Capital in Excess of Par—Common Stock (also called Additional Paid-in Capital)**. The **Paid-in Capital in Excess of Par—Common Stock** account indicates any excess over par value paid in by stockholders in return for the shares issued to them. Once paid in, the excess over par becomes a part of a company's additional paid-in capital. The individual stockholder has no greater claim on the excess paid in than all other holders of the same class of shares.

[4]Companies rarely, if ever, issue stock at a value below par value. If issuing stock below par, the company records the discount as a debit to Additional Paid-in Capital. In addition, the corporation may call on the original purchaser or the current holder of the shares issued below par to pay in the amount of the discount to prevent creditors from sustaining a loss upon liquidation of the corporation.

Example 14.1 illustrates how these accounts are used.

Example 14.1
Issue Common Stock

FACTS Assume that **TripNerd** issued 4,000 shares of stock with a par value of $1 for $10 per share.

QUESTION What entry would TripNerd make to record this transaction?

SOLUTION

The stock was issued for $10 per share, which is $9 greater than the par value. The entry to record the issuance is as follows.

Cash (4,000 × $10)	40,000	
Common Stock (4,000 × $1)		4,000
Paid-in Capital in Excess of Par—Common Stock (4,000 × $9)		36,000

No-Par Stock Many states permit the issuance of common stock without par value, called **no-par stock**. One of the reasons for allowing no-par stock is to avoid confusion over the relationship, or lack of relationship, between the par value and fair value. However, a major disadvantage of no-par stock is that some states levy a high tax on these issues. In addition, issuance of no-par stock **avoids the contingent liability** (see footnote 4) that might occur if the corporation issued par value stock at a discount.

Corporations sell no-par shares, like par value shares, for whatever price they will bring. Since there is no par value, there is no need for the Paid-in Capital in Excess of Par account. The exact amount received represents the credit to common stock.

Example 14.2
Issue No-Par Stock

FACTS Refer to the facts in Example 14.1. Assume now that **TripNerd** issued 4,000 shares of no-par stock for $10 per share.

QUESTION What entry would TripNerd make to record this transaction?

SOLUTION

TripNerd makes the following entry.

Cash (4,000 × $10)	40,000	
Common Stock (no-par value)		40,000

If TripNerd issues another 500 shares for $11 per share, it would make this entry:

Cash (500 × $11)	5,500	
Common Stock (no-par value)		5,500

True no-par stock should be carried in the accounts at issue price, but some states require that no-par stock have a **stated value**. The stated value is a minimum value. Essentially, stated value stock creates the same issues as par value stock.

If no-par stock has a stated value of $5 per share but sells for $11, the amount in excess of $5 is recorded as additional paid-in capital. No-par value stock with a low stated value permits a new corporation to begin its operations with additional paid-in capital that may exceed its stated capital.

Example 14.3
Issue No-Par Stock with Stated Value

FACTS Refer to the facts in Example 14.2. Assume now that **TripNerd** issued 4,000 shares of stock with a stated value of $1 for $10 per share.

QUESTION What entry would TripNerd make to record this transaction?

SOLUTION

TripNerd makes the following entry.

Cash (4,000 × $10)	40,000	
Common Stock (4,000 × $1)		4,000
Paid-in Capital in Excess of Stated Value—Common Stock (4,000 × $9)		36,000

TripNerd accounts for no-par stock with a stated value as if it were par value stock with par equal to the stated value.

Stock Issued with Other Securities (Lump-Sum Sales) Generally, corporations like **Groupon** or **Beyond Meats** sell classes of stock separately from one another. The reason is to track the proceeds relative to each class. Occasionally, a corporation issues two or more classes of securities for a single payment or lump sum (e.g., in the acquisition of another company). The accounting problem in **lump-sum sales** is how to allocate the proceeds among the several classes of securities. Companies use one of two methods of allocation: (1) the proportional method and (2) the incremental method.

Proportional Method If the fair value or other sound basis for determining relative value is available for each class of security, **the company allocates the lump sum received among the classes of securities on a proportional basis.**

Example 14.4
Proportional Allocation of Proceeds

FACTS Twilla Inc. issues 1,000 shares of $1 stated value common stock having a fair value of $20 per share, and 1,000 shares of $1 par value preferred stock having a fair value of $12 per share, for a lump sum of $30,000.

QUESTIONS (a) How would Twilla allocate the proceeds between the two classes of stock under the proportional method and (b) what entry would Twilla make to record this transaction?

SOLUTION

a. Twilla allocates the $30,000 to the two classes of shares as follows.

Fair value of common (1,000 × $20)	$20,000
Fair value of preferred (1,000 × $12)	12,000
Aggregate fair value	$32,000

$$\text{Allocated to common: } \frac{\$20,000}{\$32,000} \times \$30,000 = \$18,750$$

$$\text{Allocated to preferred: } \frac{\$12,000}{\$32,000} \times \$30,000 = \$11,250$$

Total allocation	$30,000

b. The entry to record this transaction is as follows.

Cash	30,000	
Common Stock (1,000 × $1)		1,000
Paid-in Capital in Excess of Par—Common Stock ($18,750 − $1,000)		17,750
Preferred Stock (1,000 × $1)		1,000
Paid-in Capital in Excess of Stated Value—Preferred Stock ($11,250 − $1,000)		10,250

Incremental Method In instances where a company cannot determine the fair value of all classes of securities, it may use the incremental method. It uses the fair value of the securities as a basis for those classes that it knows, and allocates the remainder of the lump sum to the class for which it does not know the fair value.

Example 14.5 Incremental Allocation of Proceeds

FACTS Refer to the facts in Example 14.4. However, the preferred shares now have no established fair value.

QUESTIONS (a) How would Twilla allocate the proceeds between the two classes of stock under the incremental method? (b) What entry would Twilla make to record the transaction?

SOLUTION

a. The allocation between the common and preferred stock is as follows.

Lump-sum receipt	$30,000
Allocated to common (1,000 × $20)	(20,000)
Balance allocated to preferred	$10,000

b. The entry to record this transaction is as follows.

Cash	30,000	
Common Stock (1,000 shares × $1)		1,000
Paid-in Capital in Excess of Par—Common Stock ($20,000 − $1,000)		19,000
Preferred Stock (1,000 shares × $1)		1,000
Paid-in Capital in Excess of Stated Value—Preferred Stock ($10,000 − $1,000)		9,000

In Example 14.5, if Twilla cannot determine fair value for any of the classes of stock involved in a lump-sum exchange, it may need to use other approaches. It may rely on an expert's appraisal. Or, if the company knows that one or more of the classes of securities issued will have a determinable fair value in the near future, it may use a best estimate basis with the intent to adjust later, upon establishment of the future fair value.

Stock Issued in Noncash Transactions Accounting for the issuance of shares of common stock for property or services involves an issue of valuation. **The general rule: Companies should record stock issued for services or property other than cash at either the fair value of the stock issued or the fair value of the noncash consideration received, whichever is more clearly determinable.**

If a company can readily determine both, and the transaction results from an arm's-length exchange (or an exchange in which the buyers and sellers act independently and do not have any relationship), there will probably be little difference in their fair values. In such cases, the basis for valuing the exchange should not matter.

If a company cannot readily determine either the fair value of the stock it issues or the property or services it receives, it should employ an appropriate valuation technique. Depending on available data, the valuation may be based on market transactions involving comparable assets or the use of discounted expected future cash flows. Companies should avoid the use of the book, par, or stated values as a basis of valuation for these transactions.

The transactions shown in **Illustration 14.6** indicate the journal entries that Marlowe Company would record under various circumstances for the issuance of 10,000 shares of $10 par value common stock in exchange for a patent.

ILLUSTRATION 14.6 Common Stock Issuance

Marlowe cannot readily determine the fair value of the patent, but it knows the fair value of the stock is $140,000.

Patents	140,000	
Common Stock (10,000 shares × $10 per share)		100,000
Paid-in Capital in Excess of Par—Common Stock		40,000

Marlowe cannot readily determine the fair value of the stock, but it determines the fair value of the patent is $150,000.

Patents	150,000	
Common Stock (10,000 shares × $10 per share)		100,000
Paid-in Capital in Excess of Par—Common Stock		50,000

Marlowe cannot readily determine the fair value of the stock nor the fair value of the patent. An independent consultant values the patent at $125,000 based on discounted expected cash flows.

Patents	125,000	
Common Stock (10,000 shares × $10 share)		100,000
Paid-in Capital in Excess of Par—Common Stock		25,000

In corporate law, the board of directors has the power to set the value of noncash transactions. However, boards sometimes abuse this power. The issuance of stock for property or services has resulted in cases of overstated corporate capital through intentional overvaluation of the property or services received.

- The overvaluation of the stockholders' equity resulting from inflated asset values creates **watered stock**. The corporation should eliminate the "water" by simply writing down the overvalued assets.
- If, as a result of the issuance of stock for property or services, a corporation undervalues the recorded assets, it creates **secret reserves**.

An understated corporate structure (secret reserve) may also result from other methods: excessive depreciation or amortization charges, expensing capital expenditures, excessive write-downs of inventories or receivables, or any other understatement of assets or overstatement of liabilities. An example of a liability overstatement is an excessive provision for estimated product warranties that ultimately results in an understatement of stockholders' equity, thereby creating a secret reserve.

Costs of Issuing Stock

When a company like **Walgreens** issues common stock, it should report direct costs incurred to sell stock, such as underwriting costs, accounting and legal fees, printing costs, and taxes, as a reduction of the amounts received. Walgreens therefore debits issue costs to Paid-in Capital in Excess of Par—Common Stock because they are unrelated to corporate operations. In effect, **issue costs are a cost of financing**. As such, issue costs should reduce the proceeds received from the sale of the stock.

Walgreens should expense the management salaries and other indirect costs related to the stock issue because it is difficult to establish a relationship between these costs and the sale proceeds. In addition, Walgreens expenses recurring costs, primarily registrar and transfer agents' fees, which result from maintaining the shareholders' records and transfer fee arrangements.

Example 14.6
Issuance Costs

FACTS SteadyShot recently issued 1,000,000 shares of $1 par value common stock at a total price of $8,000,000. Costs incurred in issuing the stock are underwriter fees $500,000, printing fees $29,000, external legal fees $250,000, travel costs of $25,000 related to roadshows to sell these shares to potential investors, and $50,000 of indirect costs from SteadyShot's internal legal and accounting teams working on the stock issue.

QUESTION What entry would SteadyShot make to record this transaction?

SOLUTION

The underwriting fees, printing fees, external legal fees, and travel costs related to selling these shares, totaling $804,000 ($500,000 + $29,000 + $250,000 + $25,000), should reduce the additional paid-in capital related to issuance of the common stock. The entry to record the issuance of SteadyShot's stock should be recorded as follows.

Cash	8,000,000	
Common Stock (1,000,000 shares × $1)		1,000,000
Paid-in Capital in Excess of Par—Common Stock		7,000,000

The amount charged to the paid-in capital is as follows.

Paid-in Capital in Excess of Par—Common Stock	804,000	
Cash		804,000

The internal legal and accounting costs for working on the issuance should be expensed because these costs would have been incurred even if SteadyShot had not issued common stock.

Preferred Stock

Preferred stock is a special class of shares that possess certain preferences, characteristics, or features not possessed by common stock. The characteristics listed in **Illustration 14.7** are those most often associated with preferred stock issues.

ILLUSTRATION 14.7 Preferred Stock Characteristics

Characteristics	Description
Dividends	Preferred stockholders receive dividends before common stockholders. In many cases, if a dividend is not paid each year, it is required to be paid in a future period before common stock receives any dividend (referred to as the cumulative feature).
Nonvoting	Preferred stockholders generally do not have voting rights like common stockholders.
Liquidation	If the company liquidates, preferred stockholders have a claim on the company's assets after creditors' claims are paid and therefore before common stock claims are paid.
Term	Preferred stock is generally perpetual or redeemable by the owner because of some specific event. In limited cases, the preferred stock is mandatorily redeemable and is reported as a liability.

Why do companies like **Bank of America**, **AT&T**, or **Nike** issue preferred stock? In many cases, companies use the monies for special projects, such as additional research and development or to help fund an acquisition (see **Global View**). Another reason is that preferred stock is generally considered equity and not debt. As a result, it does not increase a company's debt-to-equity ratio while also giving less control to outsiders than common stock. Similarly, if a company misses a dividend payment on a preferred stock, it is not considered in default. If the company uses bond financing and misses an interest payment, it is often considered a default.

- Companies usually issue preferred stock with a par value, expressing the dividend preference as a **percentage of the par value**. For example, holders of 8% preferred stock with a $100 par value are entitled to an annual dividend of $8 per share ($100 × .08). This stock is commonly referred to as 8% preferred stock.
- In the case of no-par preferred stock, a corporation expresses a dividend preference as a **specific dollar amount** per share, for example, $7 per share. This stock is commonly referred to as $7 preferred stock.

The accounting for preferred stock at issuance is similar to that for common stock. A corporation uses separate accounts for preferred stock and allocates proceeds between the par value of the preferred stock and additional paid-in capital.

Global View

The U.S. system of corporate governance and finance depends to a large extent on equity financing and the widely dispersed ownership of shares traded in highly liquid markets. The Japanese system relies more on debt financing, interlocking stock ownership, and banker/director and worker/shareholder rights. *See the IFRS Insights section at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

Example 14.7
Preferred Stock Issuance

FACTS State Bank issues 10,000 shares of $10 par value preferred stock for $12 cash per share.

QUESTION How would State Bank record this transaction?

SOLUTION

State Bank records the issuance as follows.

Cash (10,000 shares × $12)	120,000	
Preferred Stock (10,000 shares × $10)		100,000
Paid-in Capital in Excess of Par—Preferred Stock (10,000 × $2)		20,000

Reporting Preferred Stock

Preferred stock generally has no maturity date. Therefore, no legal obligation exists to pay the preferred stockholder.

- As a result, companies generally report preferred stock as the first item in the stockholders' equity section of the balance sheet.
- They report any excess over par value as part of additional paid-in capital.
- Similar to dividends on common stock, preferred dividends are considered a distribution of income and not an expense.

Companies must disclose the pertinent rights of the preferred stock outstanding in the notes to the financial statements. **[1]** (See the FASB Codification References near the end of the chapter.)

Features of Preferred Stock

A corporation may attach whatever preferences or restrictions, in whatever combination it desires, to a preferred stock issue, as long as it does not specifically violate its state incorporation law. Also, it may issue more than one class of preferred stock. We discuss the most common features attributed to preferred stock next.

Cumulative Preferred Stock **Cumulative preferred stock** requires that if a corporation fails to pay a dividend in any year, it must make it up in a later year before paying any dividends to common stockholders. If the directors fail to declare a dividend at the normal date for dividend action, the dividend is said to have been "passed."

- Any passed dividend on cumulative preferred stock constitutes a **dividend in arrears**.
- Because no liability exists until the board of directors declares a dividend, a corporation does not record a dividend in arrears as a liability but discloses it in a note to the financial statements.

A corporation seldom issues noncumulative preferred stock because a passed dividend is lost forever to the preferred stockholder. As a result, this stock issue would be less marketable.

Participating Preferred Stock Holders of **participating preferred stock** share ratably with the common stockholders in any profit distributions beyond the prescribed rate. For example, 5% preferred stock, if fully participating, will receive not only its 5% return, but also dividends at the same rates as those paid to common stockholders if paying amounts in excess of 5% of par or stated value to common stockholders. Although seldom used, examples of companies that have issued participating preferred stock are **LTV Corporation**, **Southern California Edison**, and **Allied Products Corporation**.

Convertible Preferred Stock **Convertible preferred stock** allows stockholders, at their option, to exchange preferred shares for common stock at a predetermined ratio. The convertible preferred stockholder not only enjoys a preferred claim on dividends but also has the option of converting into a common stockholder with unlimited participation in earnings.

Companies consider convertible preferred stock as a part of stockholders' equity. When stockholders exercise the conversion option on convertible preferred stock, there is no theoretical justification for the company to recognize a gain or loss. Instead, the company **employs the book value method**: debit Preferred Stock, along with any related Paid-in Capital in Excess of Par—Preferred Stock and credit Common Stock and Paid-in Capital in Excess of Par—Common Stock (if an excess exists).

Example 14.8 Convertible Preferred Stock

FACTS Marinelli Corporation has outstanding par value of convertible preferred stock of $400,000 and related Paid-in Capital in Excess of Par—Preferred Stock $60,000. Stockholders convert the preferred stock into no-par common stock, which is presently reported at $1,000,000. The fair value of the convertible preferred stock is $600,000.

QUESTION How would Marinelli record the conversion of this preferred stock?

SOLUTION

The entry to record this conversion is as follows.

Preferred Stock	400,000	
Paid-in Capital in Excess of Par—Preferred Stock	60,000	
Common Stock		460,000

The Preferred Stock and related Paid-in Capital in Excess of Par accounts are debited at their book value. Common stock does not have a par value so the entire amount is credited to Common Stock. Marinelli does not record any gain or loss when dealing with stockholders in their capacity as business owners.

Callable Preferred Stock

Callable preferred stock permits the corporation, at its option, to call or redeem the outstanding preferred shares at specified future dates and at stipulated prices. Many preferred issues are callable.

- The corporation usually sets the call or redemption price slightly above the original issuance price and commonly states it in terms related to the par value.
- The callable feature permits the corporation to use the capital obtained through the issuance of such stock until the need has passed or it is no longer advantageous.
- An issuer may issue callable preferred shares to gain additional flexibility over its cost of capital.

For example, if market rates decrease, the issuer can call the preferred shares and issue a new instrument at a lower cost of capital.

The existence of a call price or prices tends to set a ceiling on the market price of the preferred shares unless they are convertible into common stock. When a corporation calls preferred stock, it must pay any dividends in arrears.

Redeemable Preferred Stock

In some cases, issuance of preferred stock has features more like debt (legal obligation to pay) than an equity instrument (no legal obligation to pay). **Redeemable preferred stock** allows the stockholder to redeem it at any time. In other words, the stockholder can "return" the stock to the company and be paid a set amount for the return of the stock. For example, assume that Ocean Bank issues $2 million of preferred stock to **Surf Station, Inc.**, which is redeemable by Surf Station at any time. In this situation, the preferred stock has characteristics of both debt and equity:

- **Debt characteristic**. Surf Station, the preferred stockholder, can demand payment at any time (legal obligation to pay).
- **Equity characteristic**. The date of redemption is not known (no legal obligation to pay).

Preferred stock with a redemption feature, like that issued by Ocean Bank, is reported **neither as debt nor equity** on the balance sheet but is reported **between** debt and equity in a temporary section, often referred to as the mezzanine or temporary equity section. **Illustration 14.8** shows how **Alabama Power** reports some of its preferred stock.

ILLUSTRATION 14.8 Redeemable Preferred Stock Mezzanine Reporting

Alabama Power
Balance Sheet (partial)
December 30, 2020
(in $ millions)

Total Liabilities	20,702
Redeemable Preferred Stock:	
Cumulative redeemable preferred stock	
$100 par or stated value — 4.20% to 4.92%	
(Authorized —3.9 million shares; Outstanding — 0.5 million shares)	48
$1 par value — 5.00%	
(Authorized — 27.5 million shares; Outstanding — 10 million shares: $25 stated value)	243
Total redeemable preferred stock (annual dividend requirement — $15 million)	291

What happens if we assume that Ocean Bank issues $2 million of preferred stock that is redeemable by Surf Station on a certain date or upon an event that is certain to happen? In this case, Ocean Bank reports this preferred stock as a liability because it has a legal obligation to pay at a certain point in time. This type of preferred stock is often referred to as a **mandatorily redeemable preferred stock**. **Illustration 14.9** summarizes the classifications for preferred stock, depending on the nature of the redemption feature of the preferred stock.

ILLUSTRATION 14.9 Redeemable Preferred Stock Classification

Permanent Equity	Temporary Equity (Mezzanine)	Liability
Preferred stock is not redeemable.	Preferred stock is redeemable at the preferred stockholder's option, but timing is uncertain.	Preferred stock classified as debt when the issuer must redeem the preferred stock by a certain date or upon an event that is certain to happen.

In summary, mandatorily redeemable preferred stock leaves the company with no ability to avoid payment in assets sometime in the future. To be classified as permanent equity, redemption needs to be solely within the control of the issuer. If not, it should be classified as temporary equity. [2]

Put It into Practice LO 14.1
Record Stock Issuances

FACTS Stengel Company was organized on March 1, 2025. It is authorized to issue 20,000 shares of 5%, $100 par value preferred stock, and 1,500,000 shares of no-par common stock with a stated value of $1 per share. The following stock transactions were completed during the first year.

March 1	Issued 80,000 shares of common stock for cash at $5 per share.
March 10	Issued 5,000 shares of preferred stock for cash at $112 per share.
April 1	Issued 24,000 shares of common stock for land. The asking price of the land was $90,000; the fair value of the land was $70,000.
August 1	Issued 10,000 shares of common stock to attorneys in payment of their bill of $35,000 for services rendered in helping the company organize.
November 1	Issued 10,000 shares of common stock and 1,000 shares of preferred stock for a lump sum of $280,000. The fair value of the common stock is $120,000. The fair value of the preferred stock cannot be determined.

INSTRUCTIONS

Prepare the journal entries to record the above transactions.

SOLUTION

March 1		
Cash (80,000 × $5)	400,000	
Common Stock (80,000 × $1)		80,000
Paid-in Capital in Excess of Stated Value—Common Stock (80,000 × $4)		320,000
March 10		
Cash (5,000 × $112)	560,000	
Preferred Stock (5,000 × $100)		500,000
Paid-in Capital in Excess of Par—Preferred Stock (5,000 × $12)		60,000
April 1		
Land	70,000	
Common Stock (24,000 × $1)		24,000
Paid-in Capital in Excess of Stated Value—Common Stock ($70,000 − $24,000)		46,000
August 1		
Organization Expense	35,000	
Common Stock (10,000 × $1)		10,000
Paid-in Capital in Excess of Stated Value—Common Stock ($35,000 − $10,000)		25,000
November 1		
Cash	280,000	
Common Stock (10,000 × $1)		10,000
Paid-in Capital in Excess of Stated Value—Common Stock ($120,000 − $10,000)		110,000
Preferred Stock (1,000 × $100)		100,000
Paid-in Capital in Excess of Par—Preferred Stock [($280,000 − $10,000 − $110,000 − $100,000]		60,000

14.2 Reacquisition of Shares

LEARNING OBJECTIVE 2

Describe the accounting and reporting for reacquisition of shares.

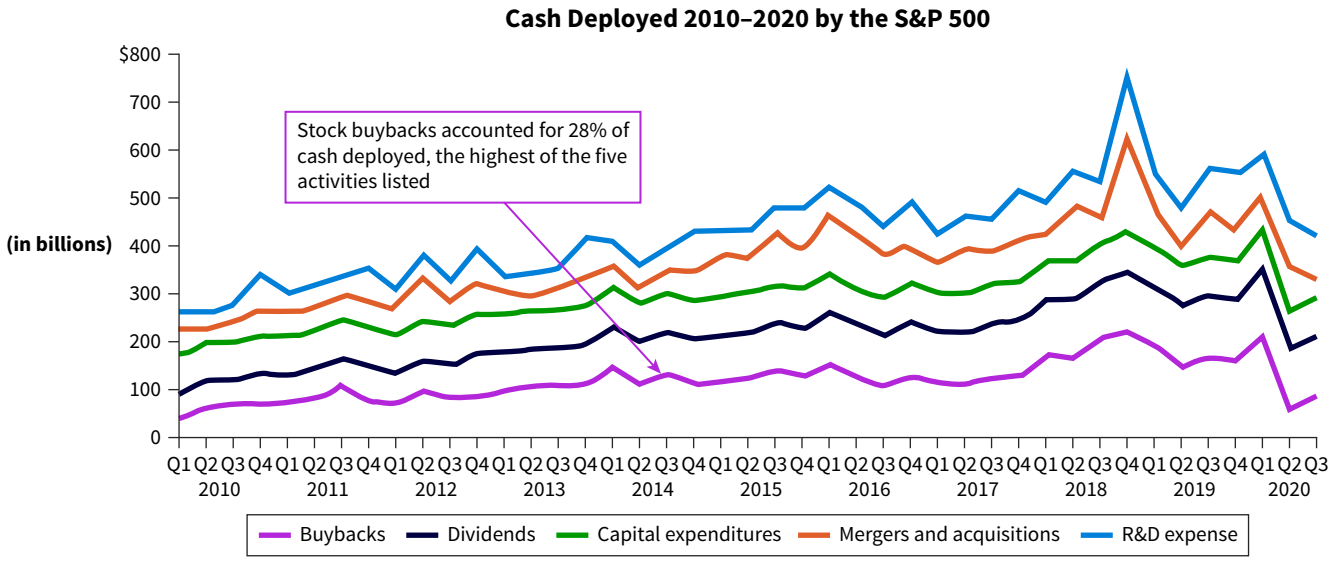
Treasury Stock

Here is a question for you: of the four alternatives below, which has involved the largest amount of expenditures by companies between 2010–2020?

1. Make investments in research and development, and property, plant, and equipment.
2. Pay dividends to shareholders.
3. Acquire other companies.
4. Buy back shares of stock.

If you read the title to this section, you probably answered buybacks (the purchase of treasury stock)—and you would be right! It has been estimated that companies have spent over $3 trillion during the recent five-year period (by the way, trillion has 12 zeros, i.e., $3,000,000,000,000!), as shown in **Illustration 14.10**.

ILLUSTRATION 14.10 Cash Expenditures on Buybacks


Cash Deployed 2010–2020 by the S&P 500
(in billions)
$800
700
600
500
400
300
200
100
0
Stock buybacks accounted for 28% of cash deployed, the highest of the five activities listed
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020
Buybacks
Dividends
Capital expenditures
Mergers and acquisitions
R&D expense

Sources: Company filings, Compustat, Research Group estimates.

Illustration 14.11 lists some of the reasons why companies buy back their shares.

ILLUSTRATION 14.11 Reasons for Buybacks

Reason	Explanation
Stock is undervalued	**Berkshire Hathaway**'s Warren Buffett approach is to time buybacks to pay less than the stock's intrinsic value (its true worth). By doing so, the remaining shareholders will receive additional returns in the marketplace because there are less shares outstanding.
Dividend commitment	Buybacks give companies more flexibility in making distributions, or dividends. If a company like **General Electric** commits to a given dividend per year, it is often reluctant to cut that dividend because it sends a signal to the market that the company may be in trouble. Buybacks provide more flexibility to a company as to whether a distribution in any given year should be made.
Dilution issues	Buybacks help to prevent dilution of ownership of existing stockholders. **Honeywell Inc.** reported that it would use part of its purchase of one million shares for employee stock compensation plans rather than issuing new stock to executives and employees.
Maintain control	A company may want to reduce its shares if it is concerned about a hostile takeover. If it has more control over the shares, it makes it more difficult on the possible unfriendly acquirer.
Changes performance metrics	Companies often buy back shares to increase various financial metrics, such as earnings per share and return on equity. For example, by buying back shares, companies increase earnings per share because the denominator in the earnings per share computation is reduced. If a company has earnings of $1,000 and 1,000 shares outstanding, its earnings per share is $1. If it buys back 200 shares, its earnings per share is $1.25. This metric makes the company look better although the earnings of the company have not changed. Other metrics such as return on equity and return on assets also are positively affected by buybacks.

The variety of buyback reasons explain buyback activity in recent years. Many view stock buybacks as a way for companies to re-invest in themselves. Each buyback decreases the amount of shares outstanding, with the company re-absorbing the portion of ownership that was previously distributed among investors. In other words, buybacks are somewhat analogous to buying out a business partner—they allow the remaining partners to own a higher share of the company. And in most cases, the company stock price responds in a positive way. For example, 86% of the buyback companies in Illustration 14.10 had returns that exceeded market benchmarks, like the return on the **S&P 500** Index.[5]

[5] D. Zion, "Buybacks, Who's Bad (or Good)?" *Zion Research Group* (January 29, 2021).

After reacquiring shares, a company may either retire them or hold them in the treasury for reissue. If not retired, these shares are referred to as **treasury stock** (**treasury shares**). Technically, treasury stock is a corporation's own stock, reacquired after having been issued and fully paid.

Treasury stock is not an asset; it is a contra stockholders' equity account. When a company purchases treasury stock, a reduction occurs in both assets and stockholders' equity. It is inappropriate to imply that a corporation can own a part of itself. Keep these three points in mind:

1. A corporation may later sell treasury stock to obtain funds, but that does not make treasury stock a balance sheet asset.
2. When a corporation buys back some of its own outstanding stock, it has not acquired an asset; it reduces net assets because cash is used for the buyback (see **Underlying Concepts**).
3. The possession of treasury stock does not give the corporation the right to vote, to exercise preemptive rights as a stockholder, to receive cash dividends, or to receive assets upon corporate liquidation.

Underlying Concepts

As we indicated in Chapter 1, an asset should have probable future economic benefits. Treasury stock simply reduces common stock outstanding.

To summarize, **treasury stock is essentially the same as unissued capital stock.** No one advocates classifying unissued capital stock as an asset in the balance sheet.

Purchase of Treasury Stock

Companies can choose from two general methods of handling treasury stock in the accounts:

1. **Cost method**. As the name implies, a company will debit the Treasury Stock account for the reacquisition cost of the stock. On the balance sheet, this account is a deduction from the total paid-in capital **and** retained earnings.
2. **Par (stated) value method**. Under this method, all transactions in treasury shares are recorded at their par value. On the balance sheet, treasury stock is reported as a deduction from capital stock only.

Both methods are generally acceptable, but the cost method enjoys more widespread use. We will focus on the accounting for the cost method.

The cost method derives its name from the fact that a company maintains the Treasury Stock account at the **cost** of the shares purchased.[6] The company debits the Treasury Stock account for the cost of the shares acquired. Upon reissuance of the shares, it credits the account for this same cost.

Example 14.9
Purchase Treasury Stock

FACTS Pacific Company issued 100,000 shares of $1 par value common stock at a price of $10 per share. In addition, it has retained earnings of $300,000. The stockholders' equity section on December 31, 2024, before purchase of treasury stock is as follows.

Stockholders' equity	
Paid-in capital	
Common stock, $1 par value, 100,000 shares issued and outstanding	$ 100,000
Additional paid-in capital (100,000 × $9)	900,000
Total paid-in capital	1,000,000
Retained earnings	300,000
Total stockholders' equity	$1,300,000

On January 20, 2025, Pacific acquires 10,000 shares of its stock at $11 per share.

QUESTION How would Pacific record the repurchase of these shares?

[6] If making numerous acquisitions of blocks of treasury shares at different prices, a company may use inventory costing methods—such as specific identification, average-cost, or FIFO—to identify the cost at date of reissuance.

SOLUTION

Pacific records the repurchase of shares as follows.

Treasury Stock	
1/20/25 110,000	

January 20, 2025		
Treasury Stock (10,000 shares × $11)	110,000	
Cash		110,000

Note in Example 14.9 that Pacific debited Treasury Stock for the cost of the shares purchased. The original issue price of the common stock, $10, does not affect the entry to record the acquisition of the treasury stock. The original paid-in capital account, Common Stock, is not affected because the number of issued shares does not change. The same is true for the Paid-in Capital in Excess of Par—Common Stock account.

Example 14.10 Stockholders' Equity with Treasury Stock

FACTS Refer to the Pacific Company share repurchase in Example 14.9.

QUESTION How will the repurchase affect stockholders' equity?

SOLUTION

Pacific's stockholders' equity after repurchase of shares is as follows.

Stockholders' equity	
Paid-in capital	
Common stock, $1 par value, 100,000 shares issued and 90,000 outstanding	$ 100,000
Additional paid-in capital	900,000
Total paid-in capital	1,000,000
Retained earnings	300,000
Total paid–in capital and retained earnings	1,300,000
Less: Cost of treasury stock (10,000 shares)	110,000
Total stockholders' equity	$1,190,000

Pacific subtracts the cost of the treasury stock from the total of common stock, additional paid-in capital, and retained earnings. Treasury Stock is a contra account that has a normal debit balance. It therefore reduces stockholders' equity.

In Example 14.10, Pacific discloses both the number of shares issued (100,000) and the number in the treasury (10,000). The difference is the number of shares of stock outstanding (90,000). The term **outstanding stock** means the number of shares of issued stock that stockholders own.

Many states require a corporation to restrict retained earnings for the cost of treasury stock purchased. The restriction keeps intact the corporation's legal capital that it temporarily holds as treasury stock. When the corporation sells the treasury stock, it lifts the restriction.

Sale of Treasury Stock

Companies usually reissue or retire treasury stock. When reissuing treasury shares, the accounting for the sale depends on the price.

- If the selling price of the treasury stock equals its cost, the company records the sale by debiting Cash and crediting Treasury Stock.
- In cases where the selling price of the treasury stock is not equal to cost, then accounting for treasury stock sold **above cost** differs from the accounting for treasury stock sold **below cost**.

In the second case, when treasury stock is sold either above or below cost, both total assets and stockholders' equity will increase.

Sale of Treasury Stock Above Cost

When the selling price of treasury stock is **above** its cost, a company credits the difference to Paid-in Capital from Treasury Stock.

Example 14.11
Sell Treasury Stock Above Cost

FACTS As indicated in Example 14.9, Pacific acquired 10,000 shares of its treasury stock at $11 per share. It now sells 1,000 of the treasury shares at $15 per share on March 10, 2025.

QUESTION How would Pacific record the sale of the treasury shares?

SOLUTION

Pacific records the sale of treasury shares as follows.

March 10, 2025

Cash (1,000 × $15)	15,000	
Treasury Stock (1,000 × $11)		11,000
Paid-in Capital from Treasury Stock (1,000 × $4)		4,000

The Treasury Stock account is credited at the cost of the treasury stock of $11. Any excess over that cost is credited to a paid-in capital account for treasury stock. After this sale of treasury stock, Pacific has 9,000 shares of treasury stock left (10,000 shares – 1,000 shares).

Treasury Stock

1/20/25 110,000	3/10/25 11,000
99,000	

Paid-in Capital from Treasury Stock

	3/10/25 4,000

In Example 14.11, were you thinking that Pacific should record a gain since the treasury stock was sold for more than what the company paid for it? There are two reasons why Pacific **does not** credit $4,000 to Gain on Sale of Treasury Stock.

1. Gains on sales occur when selling **assets**; treasury stock is not an asset.
2. A gain or loss should not be recognized from stock transactions with its own stockholders.

Pacific should not include paid-in capital arising from the sale of treasury stock in the measurement of net income. Instead, it lists paid-in capital from treasury stock separately on the balance sheet, as a part of paid-in capital.

Sale of Treasury Stock Below Cost

When a corporation sells treasury stock **below** its cost, it usually **debits** the excess of the cost over selling price to Paid-in Capital from Treasury Stock, if there is a balance in that account.

Example 14.12
Sell Treasury Stock Below Cost

FACTS From Example 14.9, Pacific acquired 10,000 shares of its treasury stock at $11 per share. Pacific now sells an additional 1,000 shares of treasury stock on March 21 at $8 per share.

QUESTION How would Pacific record the sale of the treasury shares?

SOLUTION

Pacific records the sale of treasury shares as follows.

March 21, 2025

Cash (1,000 × $8)	8,000	
Paid-in Capital from Treasury Stock (1,000 × $3)	3,000	
Treasury Stock (1,000 × $11)		11,000

Since the Paid-in Capital from Treasury Stock account had a balance of $4,000, Pacific debits the entire $3,000 excess of cost over selling price to that account. After this sale of treasury stock, Pacific has 8,000 shares of treasury stock left (9,000 shares – 1,000 shares).

Treasury Stock

1/20/25 110,000	3/10/25 11,000
99,000	3/21/25 11,000
88,000	

Paid-in Capital from Treasury Stock

	3/10/25 4,000
3/21/25 3,000	
	1,000

We can make several observations based on the two sale entries in Examples 14.11 and 14.12 (sale above cost and sale below cost).

1. Pacific credits Treasury Stock **at cost** in each entry. Again, that's why this method is the cost method.
2. Pacific uses Paid-in Capital from Treasury Stock for the difference between the cost and the resale price of the shares.
3. Neither entry affects the original paid-in capital account, Common Stock.

What happens if Pacific sells treasury stock at below cost, and the balance in Paid-in Capital from Treasury Stock is not large enough to cover the difference? Once the credit balance in Paid-in Capital from Treasury Stock is eliminated, the corporation debits any additional excess of cost over selling price to Retained Earnings.

Example 14.13
Sell Treasury Stock Below Cost, Reduce Retained Earnings

FACTS Continuing the Pacific example, assume that Pacific sells an additional 1,000 shares at $8 per share on April 10. The balance in the Paid-in Capital from Treasury Stock account (before the April 10 sale) is as follows.

Paid-in Capital from Treasury Stock

3/21/21	3,000	3/10/21	4,000
		Bal.	1,000

QUESTIONS (a) What entry would Pacific make to record the sale of the treasury shares and (b) using the information from Example 14.11 and the treasury stock transactions through April 10, 2025, how would you prepare Pacific's stockholders' equity section?

SOLUTION

a. Pacific records the sale of shares as follows.

April 10, 2025

Cash (1,000 × $8)	8,000	
Paid-in Capital from Treasury Stock*	1,000	
Retained Earnings (remainder)	2,000	
Treasury Stock (1,000 × $11)		11,000

* To eliminate remaining balance.

Pacific debits $1,000 of the excess to Paid-in Capital from Treasury Stock because that is all that remains in that account. It debits the remainder to Retained Earnings. After this sale of treasury stock, Pacific has 7,000 shares of treasury stock left (8,000 shares – 1,000 shares).

b. Pacific's stockholders' equity section after the April 10 transaction is as follows.

Stockholders' equity	
Paid-in capital	
Common stock, $1 par value, 100,000 shares issued and 93,000 outstanding	$ 100,000
Additional paid-in capital—common stock	900,000
Total paid-in capital	1,000,000
Retained earnings ($300,000 − $2,000)	298,000
Total paid-in capital and retained earnings	1,298,000
Less: Cost of treasury stock (7,000 shares)	77,000
Total stockholders' equity	$1,221,000

Treasury Stock

1/20/25	110,000		
		3/10/25	11,000
	99,000		
		3/21/25	11,000
	88,000		
		4/10/25	11,000
	77,000		

Paid-in Capital from Treasury Stock

		3/10/25	4,000
3/21/25	3,000		
			1,000
4/10/25	1,000		
			0

In Example 14.13, pay close attention to the number of shares of common stock outstanding. The number of shares issued remains at 100,000 shares, but the number of shares outstanding is only 93,000 shares. Remember, the 7,000 shares of treasury stock are **not** outstanding because they are **not** owned by shareholders.

Retiring Treasury Stock

The board of directors may approve the retirement of treasury shares. This decision results in cancellation of the treasury stock and a reduction in the number of shares of issued stock. Retired treasury shares have the status of authorized and unissued shares. The accounting effects are similar to the sale of treasury stock except that corporations debit the **paid-in capital accounts applicable to the retired shares** instead of cash.

Example 14.14
Retire Treasury Stock

FACTS Continuing the Pacific example, after the sale of treasury shares on April 10, 2025, the company decides to retire the remaining 7,000 treasury shares on April 15, 2025.

QUESTION What entry would Pacific make to record the retirement of the treasury shares?

SOLUTION

Pacific records the retirement as follows.

March 1, 2025		
Common Stock (7,000 × $1 par)	7,000	
Paid-in Capital in Excess of Par—Common Stock ($9 × 7,000)	63,000	
Retained Earnings (remainder)	7,000	
Treasury Stock (7,000 shares × $11)		77,000

Originally, Pacific sold the shares at $9 above the par value of $1 (see Example 14.9). As a result, it debits Common Stock and Paid-in Capital in Excess of Par—Common Stock to reverse the $10 per share at retirement. The difference between the cost of the remaining treasury shares and their original issue value is debited to Retained Earnings because the Paid-in Capital from Treasury Stock has a zero balance.

Note that depending on where Pacific incorporates, a state may require a debit (or credit) to Paid-in Capital in Excess of Par and not to Retained Earnings when recording the retirement. *For homework, follow the approach shown in this example.*

Accounting Matters — Buybacks—Good or Bad?

Companies have ramped up repurchases of their own stock. Providing a look into the individual companies engaged in share buybacks shown in Illustration 14.10, here is what the top five companies in the S&P 500 spent repurchasing shares in the 12-month period ending March 2020.

Fiscal 2020	
Company	**Buybacks ($ billion)**
Apple	$76.6
Alphabet	23.9
Microsoft	21.8
JPMorgan Chase	25.4
Bank of America	28.2

Is this good or bad news for investors? Maybe neither. While it might appear that companies are getting better at timing their purchases (when prices are falling), they also buy shares for reasons that go beyond giving a boost to shareholders—everything from mergers and acquisitions to eliminating the dilution impact of equity compensation.

The conventional wisdom is that companies that buy back shares believe their shares are undervalued. Thus, analysts view the buyback announcement as an important piece of inside information about future company prospects. On the other hand, buybacks can actually hurt businesses and their shareholders over the long run. For example, drug-makers **Merck**, **Pfizer**, and **Amgen** spent heavily on stock repurchases, possibly at the expense of research and development. And whether the buyback is a good thing appears to depend a lot on why the company did the buyback and what the repurchased shares were used for.

Sources: Adapted from B. Levisohn, "Beware All Those Buybacks," *Wall Street Journal* (September 29–30, 2012), p. B9; A. Bary, "Why the Buyback Boom Is Bullish for Investors," *Barron's* (May 12, 2018); and *S&P Buyback File* (June 24, 2020).

Put It into Practice LO 14.2
Record Treasury Stock Transactions

FACTS In 2025, Zetas Corporation entered into the following transactions.

March 4	Issued 200,000 shares of $1 par value common stock for $1,000,000.
September 10	Bought back 2,000 shares at a price of $6 per share.
October 15	Sold 1,000 of the treasury shares for $8 per share.
November 20	Retired the shares remaining in treasury.

INSTRUCTIONS

Prepare entries for these transactions using the cost method.

SOLUTION

To issue the Zetas stock:

March 4, 2025

Cash	1,000,000	
Common Stock (200,000 × $1)		200,000
Paid-in Capital in Excess of Par—Common Stock [200,000 × ($5 − $1)]		800,000

To record the purchase of the stock:

September 10, 2025

Treasury Stock	12,000	
Cash (2,000 × $6)		12,000

To record the sale of treasury shares:

October 15, 2025

Cash ($8 × 1,000)	8,000	
Paid-in Capital from Treasury Stock (1,000 × $2)		2,000
Treasury Stock (1,000 × $6)		6,000

To record the retirement of the treasury shares:

November 20, 2025

Common Stock (1,000 × $1)	1,000	
Paid-in Capital in Excess of Par—Common Stock [1,000 × ($5 − $1)]	4,000	
Paid-in Capital from Treasury Stock	2,000	
Retained Earnings		1,000
Treasury Stock		6,000

14.3 Dividend Policy

LEARNING OBJECTIVE 3

Explain the accounting and reporting issues related to dividends.

Dividend payouts can be important signals to the market. A dividend check provides proof that at least some portion of a company's profits is genuine. As one analyst noted, "Companies with the ability to grow dividends over time tend to be durable businesses with strong cash flow and relatively predictable earnings. . . . So you're more likely to get a return on your investment year in and year out."[7]

[7]The share of U.S. and European companies expected to increase dividends in 2018 is forecast to reach its highest level in at least a decade—a boost for investors facing resurgent stock volatility, rising interest rates, and geopolitical risk. Among big listed companies in the United States and Europe, about 71% and 83%, respectively, are expected to increase dividends in 2018, the highest share in at least a decade, according to research by **JPMorgan**. See J. Sindreu, "Firms Poised to Jack Up Dividends," *Wall Street Journal* (April 19, 2018).

Determining the proper amount of dividends to pay is a difficult financial management decision. Companies paying dividends are extremely reluctant to reduce or eliminate their dividend. They fear that the securities market might negatively view this action. As a consequence, dividend-paying companies will make every effort to continue to do so. In addition, the type of shareholder the company has (taxable or nontaxable, retail investor or institutional investor) plays a large role in determining dividend policy.

Very few companies pay dividends in amounts equal to their legally available retained earnings. The major reasons are as follows.

1. **To maintain agreements (bond covenants)** with specific creditors, to retain all or a portion of the earnings, in the form of assets, to build up additional protection against possible loss.
2. **To meet state corporation requirements**, that earnings equivalent to the cost of treasury shares purchased be restricted against dividend declarations.
3. **To retain assets** that would otherwise be paid out as dividends, to finance growth or expansion. This is sometimes called internal financing, reinvesting earnings, or "plowing" the profits back into the business.
4. **To smooth out dividend payments** from year to year by accumulating earnings in good years and using such accumulated earnings as a basis for dividends in bad years.
5. **To build up a cushion or buffer** against possible losses or errors in the calculation of profits.

The reasons above are self-explanatory except for the second. The laws of some states require that the corporation restrict its legal capital from distribution to stockholders, to protect against loss for creditors.[8] The applicable state law determines the legality of a dividend.

Financial Condition and Dividend Distributions

Effective management of a company requires attention to more than the legality of dividend distributions. Management must also consider economic conditions, most importantly, liquidity.

Example 14.15 Economics of Dividends

FACTS Miracle Pod is a company that records daily podcasts. Its balance sheet, consisting only of recording equipment, is as follows.

Recording equipment	$500,000	Capital stock	$400,000
		Retained earnings	100,000
	$500,000		$500,000

QUESTION Does the company have sufficient funds to pay dividends?

SOLUTION

Miracle Pod has positive retained earnings. Unless restricted, it can declare a dividend of $100,000. But because all its assets are property, plant, and equipment used in operations, payment of a cash dividend of $100,000 would require the sale of its recording equipment or borrowing.

Even if a balance sheet shows current assets, as the following shows, the question remains as to whether the company needs its cash for other purposes.

Cash	$100,000	Current liabilities		$ 60,000
Recording equipment	460,000	Capital stock	$400,000	
	$560,000	Retained earnings	100,000	500,000
				$560,000

Here, the existence of current liabilities strongly implies that Miracle Pod needs some of the cash to meet current debts as the company matures. In addition, day-to-day cash requirements for payrolls and other expenditures not included in current liabilities also require cash.

[8] If the corporation buys its own outstanding stock, it reduces its capital and distributes assets to stockholders. If permitted, the corporation could, by purchasing treasury stock at any price desired, return to the stockholders their investments and leave creditors with little or no protection against loss.

As Example 14.15 demonstrates, before declaring a dividend, management must therefore consider the **availability of funds to pay the dividend**. A company should not pay a dividend unless both the present and future financial position warrant the distribution.

The SEC encourages companies to disclose their dividend policy in their annual report. Here are two situations when disclosure is important:

1. A company has earnings but fails to pay dividends.
2. A company does not expect to pay dividends in the foreseeable future.

The SEC encourages companies that consistently pay dividends to indicate whether they intend to continue this practice in the future.

Types of Dividends

Companies generally base dividend distributions either on accumulated profits (that is, retained earnings) or on some other capital item such as additional paid-in capital. The types of dividends are:

1. Cash dividends.
2. Property dividends or dividends in kind.
3. Liquidating dividends.

These types of dividends **reduce the total stockholders' equity** in the corporation because the corporation is paying out assets.

Cash Dividends

The board of directors of a corporation votes on the declaration of **cash dividends**. Upon approval of the resolution, the board declares a dividend. Before paying it, however, the company must prepare a current list of stockholders. For this reason, there is usually a time lag between declaration and payment. **Illustration 14.12** shows the timeline of dividend events.

ILLUSTRATION 14.12 Timeline of Dividend Events

Date of declaration	The date the board of directors approves a resolution to pay a dividend. On this date, the declared cash dividend becomes a liability, so a journal entry is made. Because payment is generally required very soon, it is usually a current liability.
Date of record	The date a corporation determines the current stockholders. Stockholders on the date of record receive the dividend. No journal entry is required on the date of record.[9]
Date of payment	The date dividend checks are mailed or deposited electronically to stockholders. A journal entry is made to record the payment of cash and reduction of the liability.

[9]Theoretically, the ex-dividend date is the day after the date of record. However, to allow time for transfer of the shares, the stock exchanges generally advance the ex-dividend date two to four days. Therefore, the party who owns the stock on the day prior to the expressed ex-dividend date receives the dividends. The party who buys the stock on and after the ex-dividend date does not receive the dividend. Between the declaration date and the ex-dividend date, the market price of the stock includes the dividend.

Example 14.16
Cash Dividend

FACTS Roadway Freight Corp. on June 10 declared a cash dividend of 50¢ a share on 1.8 million shares payable July 16 to all stockholders of record June 24.

QUESTION What are the entries to record the declaration and payment of the cash dividend?

SOLUTION

At date of declaration:

June 10		
Retained Earnings (Cash Dividends Declared)	900,000	
Dividends Payable (1.8 million × $0.50)		900,000

At date of record:

June 24		
No entry		

At date of payment:

July 16		
Dividends Payable	900,000	
Cash		900,000

A company may declare dividends in one of two ways:

1. **An amount per share.** This is demonstrated in Example 14.16 in which Roadway Freight declared a 50¢ dividend per share.
2. **As a percentage of par value**. Dividends on preferred stock are typically expressed as a percentage of par value. For example, if preferred stock has a 6% dividend, the 6% is multiplied by the total par value of outstanding shares to determine the total dividend.

Recall that one of the common preferences attached to preferred stock is that it is cumulative in nature, meaning that if a company does not declare a dividend in a year, those dividends are in arrears. At the next declaration, the company must pay their preferred shareholders the current year dividend plus any dividends in arrears.

Example 14.17
Dividend in Arrears

FACTS Assume that **Citigroup** declared a dividend on December 31, 2025, on its 500,000 shares of $1 par value, 7%, cumulative preferred shares outstanding. Citigroup did not declare any dividends in 2024.

QUESTION What amount of dividend will be paid to Citigroup's preferred shareholders as a result of the dividend declared on December 31, 2025?

SOLUTION

Citigroup will pay its preferred shareholders the dividend from 2025 and the dividends in arrears from 2024 as follows.

Dividend calculation:	500,000 shares × $1 par = $500,000 par value outstanding	
	$500,000 par value × .07 dividend rate = $35,000 annual dividend	
Preferred dividend paid:	2024 dividends in arrears	$35,000
	2025 dividends	35,000
		$70,000

Remember, **companies do not declare or pay cash dividends on treasury stock.**

Dividend policies vary among corporations. Some companies, such as **JPMorgan Chase**, **Clorox Co.**, and **Tootsie Roll Industries**, take pride in a long, unbroken string of quarterly dividend payments. They would lower or pass the dividend only if forced to do so by a sustained decline in earnings or a critical shortage of cash.

"Growth" companies, on the other hand, pay little or no cash dividends because their policy is to expand as rapidly as internal and external financing permit. For example, **Questcor Pharmaceuticals Inc.** has never paid cash dividends to its common stockholders. These investors hope that the price of their shares will appreciate in value. The investors will then realize a profit when they sell their shares. Many companies focus more on increasing share price, stock repurchase programs, and corporate earnings than on dividend payout.

Property Dividends

Dividends payable in assets of the corporation other than cash are called **property dividends** or **dividends in kind**. Property dividends may be merchandise, real estate, or investments, or whatever form the board of directors designates. **Ranchers Exploration and Development Corp.** reported one year that it would pay a fourth-quarter dividend in gold bars instead of cash. Because of the obvious difficulties of divisibility of units and delivery to stockholders, the most common property dividend is in the form of securities of other companies that the distributing corporation holds as an investment.

For example, after ruling that **DuPont**'s 23% stock interest in **General Motors (GM)** violated antitrust laws, the Supreme Court ordered DuPont to divest itself of the GM stock within 10 years. The stock represented 63 million shares of GM's 281 million shares then outstanding. DuPont could not sell the shares in one block of 63 million. Further, it could not sell 6 million shares annually for the next 10 years without severely depressing the value of the GM stock. DuPont solved its problem by declaring a property dividend and distributing the GM shares as a dividend to its own stockholders.

- When declaring a property dividend, the corporation should **restate at fair value the property it will distribute**, **recognizing any gain or loss** as the difference between the property's fair value and carrying value at date of declaration.
- The corporation may then record the declared dividend as a debit to Retained Earnings (or Property Dividends Declared) and a credit to Property Dividends Payable, at an amount equal to the fair value of the distributed property.
- Upon distribution of the dividend, the corporation debits Property Dividends Payable and credits the account containing the distributed asset (restated at fair value).

Example 14.18
Property Dividend

FACTS Trendler, Inc. transferred to stockholders some of its equity investments costing $1,250,000 by declaring a property dividend on December 28, 2024, to be distributed on January 30, 2025, to stockholders of record on January 15, 2025. At the date of declaration, the securities have a fair value of $2,000,000.

QUESTION What entries should Trendler make to record the property dividend?

SOLUTION

At date of declaration:

December 28, 2024		
Equity Investments	750,000	
Gain on Investment ($2,000,000 − $1,250,000)		750,000
Retained Earnings (Property Dividends Declared)	2,000,000	
Property Dividends Payable		2,000,000

At date of distribution:

January 30, 2025		
Property Dividends Payable	2,000,000	
Equity Investments		2,000,000

Liquidating Dividends

The natural expectation of any stockholder who receives a dividend is that the corporation has operated successfully. As a result, the stockholder is receiving a share of its profits. Some corporations may use paid-in capital as a basis for dividends. Without proper disclosure of this fact, stockholders may erroneously believe the corporation has been operating at a profit. To avoid this type of deception, intentional or unintentional, a clear statement of the source of every dividend should accompany the dividend check.

- Dividends based on other than retained earnings are sometimes described as **liquidating dividends**.
- This term implies that such dividends are a return of the stockholder's investment rather than of profits. In other words, **any dividend not based on earnings reduces corporate paid-in capital and to that extent, it is a liquidating dividend**.

As indicated in Chapter 10, companies in the extractive industries may pay dividends equal to the total of accumulated income and depletion. The portion of these dividends in excess of accumulated income represents a return of part of the stockholder's investment.

Example 14.19
Liquidating Dividend

FACTS McChesney Mines Inc. issued a "dividend" to its common stockholders of $1,200,000. The cash dividend announcement noted that stockholders should consider $900,000 as income and the remainder a return of capital.

QUESTION How should McChesney Mines record the dividend?

SOLUTION

At date of declaration:

Retained Earnings	900,000	
Paid-in Capital in Excess of Par—Common Stock	300,000	
Dividends Payable		1,200,000

Note the liquidating portion, $300,000, is debited to Paid-in Capital in Excess of Par.

At date of payment:

Dividends Payable	1,200,000	
Cash		1,200,000

In some cases, management simply decides to cease business and declares a liquidating dividend. In these cases, liquidation may take place over a number of years to ensure an orderly and fair sale of assets. For example, when **Overseas National Airways** dissolved, it agreed to pay a liquidating dividend to its stockholders over a period of years equivalent to $8.60 per share. Each liquidating dividend payment reduces paid-in capital.

Stock Dividends and Stock Splits

What if a company has been profitable but wants to conserve cash or perhaps lacks sufficient cash to pay a cash dividend? Another way to "reward" stockholders is with a stock dividend or a stock split.

Stock Dividends

If management wishes to "capitalize" part of the earnings (i.e., reclassify amounts from earned to contributed capital) and thus retain earnings in the business on a permanent basis, it may issue a stock dividend. In this case, **the company distributes no assets**. Each stockholder maintains exactly the same proportionate interest in the corporation and the same total book value after the company issues the stock dividend. Of course, the book value per share is lower because each stockholder holds more shares.

A **stock dividend** therefore is the issuance by a corporation of its own stock to its stockholders on a pro rata basis, without receiving any consideration. In recording a stock dividend, some believe that the company should transfer the **par value of the stock issued** as a dividend from retained earnings to capital stock. Others believe that it should transfer the **fair value of the stock issued**—its market value at the declaration date—from retained earnings to capital stock and additional paid-in capital.

Underlying Concepts

By requiring fair value, the intent was to punish companies that used stock dividends. This approach violates the neutrality concept (that is, that standards-setting should be even-handed).

The fair value position was adopted, at least in part, in order to influence the stock dividend policies of corporations. Evidently in 1941, both the **New York Stock Exchange** and many in the accounting profession regarded periodic stock dividends as objectionable. They believed that the term dividend when used with a distribution of additional stock was misleading because investors' net assets did not increase as a result of this "dividend." As a result, these groups decided to make it more difficult for corporations to sustain a series of such stock dividends out of their accumulated earnings, by requiring the use of fair value when it substantially exceeded book value (see **Underlying Concepts**).[10]

- When the stock dividend is less than 20–25% of the common shares outstanding at the time of the dividend declaration, the company is therefore required to transfer the **fair value** of the stock issued from retained earnings. Stock dividends of less than 20–25% are often referred to as **small (ordinary) stock dividends**.
- This method of handling stock dividends is justified on the grounds that "many recipients of stock dividends look upon them as distributions of corporate earnings and usually in an amount equivalent to the fair value of the additional shares received." **[3]**

We consider this argument unconvincing. It is generally agreed that stock dividends are not income to the recipients. Therefore, sound accounting should not recommend procedures simply because some recipients think they are income.[11]

Example 14.20 Small Stock Dividend

FACTS Vine Corporation has outstanding 1,000 shares of $1 par value common stock and retained earnings of $50,000. If Vine declares a 10% stock dividend, it issues 100 additional shares to current stockholders (1,000 shares outstanding × .10). The fair value of the stock at the time of the stock dividend is $130 per share.

QUESTION What entries should Vine make to record the stock dividend at the date of declaration and at the date of distribution?

SOLUTION

At date of declaration:

Retained Earnings (100 × $130)	13,000	
Common Stock Dividend Distributable (100 × $1)		100
Paid-in Capital in Excess of Par—Common Stock (100 × $129)		12,900

If Vine prepares a balance sheet between the dates of declaration and distribution, it reports the Common Stock Dividend Distributable account in the stockholders' equity section as an addition to common stock.

At date of distribution:

Common Stock Dividend Distributable	100	
Common Stock		100

[10] This was perhaps the earliest instance of "economic consequences" affecting an accounting pronouncement. The Committee on Accounting Procedure described its action as required by "proper accounting and corporate policy." See Stephen A. Zeff, "The Rise of 'Economic Consequences'," *The Journal of Accountancy* (December 1978), pp. 53–66.

[11] One study concluded that **small** stock dividends do not always produce significant amounts of extra value on the date after issuance (ex date) and that **large** stock dividends almost always fail to generate extra value on the ex-dividend date. Taylor W. Foster III and Don Vickrey, "The Information Content of Stock Dividend Announcements," *The Accounting Review,* Vol. LIII, No. 2 (April 1978), pp. 360–370.

Looking at the journal entries in Example 14.20, notice that only stockholders' equity accounts are used.

- Retained Earnings is **decreased** by the fair value of the shares, and capital stock accounts are **increased** by the fair value of the shares.
- **The net effect on total stockholders' equity is zero.**
- **The journal entries merely indicate a reclassification of stockholders' equity from the Retained Earnings section to the Contributed Capital section.**

To continue with our Vine Corporation example, the stockholders' equity information is shown in **Illustration 14.13**. Before the 10% stock dividend, Vine has total stockholders' equity of $150,000 consisting of Common Stock of $1,000, Paid-in Capital in Excess of Par of $99,000 and Retained Earnings of $50,000. Assume there are three shareholders in Vine as noted in Illustration 14.13. Take a moment and study the impact on stockholders' equity after the date of declaration journal entry is made, and again after the date of distribution journal entry is made.

ILLUSTRATION 14.13 Effects of a Small (10%) Stock Dividend

Before dividend	
Common stock, 1,000 shares at $1 par	$ 1,000
Paid-in capital in excess of par—common stock	99,000
Retained earnings	50,000
Total stockholders' equity	$150,000
Stockholders' interests	
A. 400 shares, 40% interest, book value	$ 60,000
B. 500 shares, 50% interest, book value	75,000
C. 100 shares, 10% interest, book value	15,000
1,000 shares total	$150,000
After declaration but before distribution of 10% stock dividend	
If fair value ($130) is used as basis for entry:	
Common stock, 1,000 shares at $1 par	$ 1,000
Common stock distributable, 100 shares at $1 par	100
Paid-in capital in excess of par—common stock	111,900
Retained earnings ($50,000 − $13,000)	37,000
Total stockholders' equity	$150,000
After declaration and distribution of 10% stock dividend	
If fair value ($130) is used as basis for entry:	
Common stock, 1,100 shares at $1 par	$ 1,100
Paid-in capital in excess of par—common stock	111,900
Retained earnings ($50,000 − $13,000)	37,000
Total stockholders' equity	$150,000
Stockholders' interests	
A. 440 shares, 40% interest, book value	$ 60,000
B. 550 shares, 50% interest, book value	75,000
C. 110 shares, 10% interest, book value	15,000
1,100 shares total	$150,000

In reviewing Illustration 14.13, do you notice that total stockholders' equity does not change after the stock dividend? There are now 1,100 shares outstanding, but the total stockholders' equity is still $150,000. And what about the effect on the shareholders? Let's look at stockholder A. Before the stock dividend, stockholder A has 400 shares or 40% of the outstanding stock (400 ÷ 1,000). In a 10% stock dividend, stockholder A receives 40 additional shares (400 × .10) for a total of 440 shares. With 440 shares, stockholder A still has a 40% interest in Vine (440 ÷ 1,100) after the stock dividend.

Some state statutes specifically prohibit the issuance of stock dividends on treasury stock. In those states that permit treasury shares to participate in the distribution accompanying a

stock dividend or stock split, the planned use of the treasury shares influences corporate practice. For example, if a corporation issues treasury shares in connection with employee stock options, the treasury shares may participate in the distribution because the corporation usually adjusts the number of shares under option for any stock dividends or splits. But no useful purpose is served by issuing additional shares to the treasury stock without a specific purpose, since they are essentially equivalent to authorized but unissued shares.

Now let's consider a **large stock dividend**, which is a distribution of 25% or more of the common shares outstanding. Distributing significantly more shares in the market will have the effect of decreasing the market price of the stock. However, it cannot be predicted with certainty how much the market price will decrease. Therefore, corporations use par value when recording the journal entries for a large stock dividend.

Example 14.21
Large Stock Dividend

FACTS Rockland Steel, Inc. issued a large stock dividend by declaring a 30% stock dividend on November 20, distributable December 29 to stockholders of record December 12. At the date of declaration, 1,000,000 shares, par value $10, are outstanding and with a fair value of $200 per share.

QUESTIONS What entry would Rockland make at (a) the date of declaration and (b) the date of distribution?

SOLUTION

a. At date of declaration:

November 20

Retained Earnings	3,000,000	
Common Stock Dividend Distributable		3,000,000

Computations: 1,000,000 shares	300,000 additional shares
× .30 dividend	× $10 par value
300,000	$3,000,000

b. At date of distribution:

December 29

Common Stock Dividend Distributable	3,000,000	
Common Stock		3,000,000

Again, only stockholders' equity accounts are used in Example 14.21. As we saw with the small stock dividend, **the journal entries merely indicate a reclassification of stockholders' equity from the Retained Earnings section to the Contributed Capital section.** The net effect of small and large dividends on total stockholders' equity is zero.

Stock Splits

If a company has undistributed earnings over several years and accumulates a sizable balance in retained earnings, the market value of its outstanding shares likely increases significantly. Stock issued at prices less than $50 a share can easily attain a market price in excess of $200 a share over time. The higher the market price of a stock, however, the less readily some investors can purchase it.

- The managements of many corporations believe that better public relations depend on wider ownership of the corporation's stock.
- Therefore, they target a market price sufficiently low to be within range of the majority of potential investors.
- To reduce the market price of shares, corporations can execute a **stock split**.

For example, **Qualcomm**'s stock had risen above $500 per share. Qualcomm then split its stock 4-for-1, which means 1 share becomes 4 shares. The split creates more shares in the market which decreases the market price, and the stock becomes more affordable for some investors.

One classic case is **Coca-Cola**. Coca-Cola has split its stock 11 times. If it had not done all of these splits, one of Coke's original shares would be worth **$10.3 million.** From an accounting standpoint, there is **no journal entry for a stock split**. If there is no journal entry, that means there is no change to any accounts, therefore total stockholders' equity does not change. However, the number of shares increases in proportion to the split.

Illustration 14.14 shows the stockholders' equity section before and after a 2-for-1 stock split. The number of shares doubles and the par value is halved. Notice the account balances do not change.

ILLUSTRATION 14.14 Effects of a Stock Split

Stockholders' Equity Before 2-for-1 Split		Stockholders' Equity After 2-for-1 Split	
Common stock, 1,000 shares at $100 par	$100,000	Common stock, 2,000 shares at $50 par	$100,000
Retained earnings	50,000	Retained earnings	50,000
	$150,000		$150,000

Stock Split and Stock Dividend Differentiated

From a legal standpoint, a stock split differs from a stock dividend. How? A stock split increases the number of shares outstanding and decreases the par or stated value per share. **A stock dividend, although it increases the number of shares outstanding, does not decrease the par value; thus, it increases the total par value of outstanding shares.**

As discussed, the reasons for issuing a stock dividend are numerous and varied.

- Stock dividends can be primarily a publicity gesture **because many consider stock dividends as dividends**.
- The corporation may simply wish to retain profits in the business by capitalizing a part of retained earnings. In such a situation, it makes a transfer on declaration of a stock dividend from earned capital to contributed capital.

A corporation may also use a stock dividend, like a stock split, to increase the marketability of the stock, although marketability is often a secondary consideration.

If the stock dividend is large, it has the same effect on market price as a stock split. **Whenever corporations issue additional shares for the purpose of reducing the unit market price, then the distribution more closely resembles a stock split than a stock dividend. This effect usually results only if the number of shares issued is more than 20–25% of the number of shares previously outstanding.** **[4]** Recall that a stock dividend of more than 20–25% of the number of shares previously outstanding is called a large stock dividend.[12] Such a distribution should not be called a stock dividend but instead "a split-up effected in the form of a dividend" or "stock split-up."

- Since a split-up effected in the form of a dividend does not alter the par value per share, companies generally are required to transfer the par value amount from retained earnings.
- In other words, companies transfer from retained earnings to capital stock **the par value of the stock issued**, as opposed to a transfer of the market price of the shares issued as in the case of a small stock dividend.[13]

For example, **Brown Group, Inc.** at one time authorized a 2-for-1 split, effected in the form of a stock dividend. As a result of this authorization, it distributed approximately 10.5 million

[12]The SEC has added more precision to the 20–25% rule. Specifically, the SEC indicates that companies should consider distributions of 25% or more as a "split-up effected in the form of a dividend." Companies should account for distributions of less than 25% as a stock dividend. The SEC more precisely defined GAAP here. As a result, public companies follow the SEC rule.

[13]Often, a company records a split-up effected in the form of a dividend as a debit to Paid-in Capital instead of Retained Earnings to indicate that this transaction should affect only paid-in capital accounts. No reduction of retained earnings is required except as indicated by legal requirements. *For homework purposes, assume that the debit is to Retained Earnings.*

shares, and transferred more than $39 million representing the par value of the shares issued from Retained Earnings to the Common Stock account.

Illustration 14.15 summarizes and compares the effects in the balance sheet and related items of various types of dividends and stock splits.

ILLUSTRATION 14.15 Effects of Dividends and Stock Splits on Financial Statement Elements

Effect on:	Declaration of Cash Dividend	Payment of Cash Dividend	Declaration and Distribution of Small Stock Dividend	Declaration and Distribution of Large Stock Dividend	Declaration and Distribution of Stock Split
Retained earnings	Decrease	-0-	Decrease[a]	Decrease[b]	-0-
Capital stock	-0-	-0-	Increase[b]	Increase[b]	-0-
Additional paid-in capital	-0-	-0-	Increase[c]	-0-	-0-
Total stockholders' equity	Decrease	-0-	-0-	-0-	-0-
Working capital	Decrease	-0-	-0-	-0-	-0-
Total assets	-0-	Decrease	-0-	-0-	-0-
Number of shares outstanding	-0-	-0-	Increase	Increase	Increase

[a]Market price of shares. [b]Par or stated value of shares. [c]Excess of market price over par.

Accounting Matters — Splitsville

Guessing which companies might be next to split their shares is a hobby of investors. When companies' per share prices get high, some look to lower their per share prices to make them more attractive to individual investors. It's a bit of an old-fashioned development, but one that investors are still conditioned to monitor. There's no question that stocks with the highest per share prices would be the logical place to consider for possible splits.

On the other hand, certain large companies are taking a different approach. The godfather of the no-split camp is **Berkshire Hathaway**'s chairman Warren Buffett. Berkshire's Class A shares were recently selling in excess of $250,000 per share. Buffett said he didn't want to split the shares for people who found such a move a good reason for buying the stock. His point—people who buy for non-value reasons are likely to sell for non-value reasons. The table in the next column lists some companies that recently have split their stock.

Some companies executed reverse stock splits in which, say, five shares are consolidated into one. Thus, a stock previously trading at $5 per share would be part of an unsplit share trading at $25. Unsplitting might avoid some of the negative consequences of a low trading price. The downside to this strategy is that analysts might view reverse splits as additional bad news about the direction of the stock price. For example, **Webvan**, a failed Internet grocer, did a 1-for-25 reverse split just before it entered bankruptcy. And struggling **Tenet Healthcare** executed a 1-for-4 reverse split in combination with a debt restructuring, in order to get its stock price into a more favorable trading range.

Company	Ratio
Lee Enterprises	1-10
Bragg Gaming Group	1-10
High Tide, Inc.	1-15
Trade Desk, Inc.	10-1
Trex	2-1
Sherwin-Williams	3-1

Sources: M. Krantz, "Starbucks Splits Stock. Who's Next?" *USA Today* (March 18, 2015); and Erik Holm and Ben Eisen, "Amazon's Brush with $1,000 Signals the Death of the Stock Split," *Wall Street Journal* (May 26, 2017). Split data found at *marketbeat.com* (accessed March 26, 2021).

Put It into Practice LO 14.3

Record Dividends

FACTS Bronson Company had the following dividend transactions. It has 2 million outstanding common shares with a $10 par value.

a. Declared a cash dividend of $1 per share on its 2 million outstanding common shares ($10 par value). The dividend was declared on August 1, 2025, payable on September 9, 2025, to all stockholders of record on August 15, 2025.

b. Bronson owns shares of Cole Corporation stock. At December 31, 2024, the securities were carried in Bronson's accounting records at their cost of $875,000, which equals their fair value. On September 21, 2025, when the fair value of the securities was $1,200,000, Cole declared a property dividend whereby the Cole securities are to be distributed on October 23, 2025, to stockholders of record on October 8, 2025.

c. On December 1, 2025, Bronson declares a 5% stock dividend when the fair value of the stock is $35 per share. The distribution date is December 20, 2025.

d. Use the information in part (c), but assume Bronson declared a 100% stock dividend rather than a 5% stock dividend.

INSTRUCTIONS

Prepare all journal entries for these transactions, at dates of declaration, record, and distribution, as needed.

SOLUTION

a. Entries for the cash dividend are as follows.

August 1, 2025		
Retained Earnings (2,000,000 × $1)	2,000,000	
Dividends Payable		2,000,000
August 15, 2025		
No entry.		
September 9, 2025		
Dividends Payable	2,000,000	
Cash		2,000,000

b. Entries for the property dividend are as follows.

September 21, 2025		
Equity Investments	325,000	
Gain or Investment ($1,200,000 – $875,000)		325,000
Retained Earnings	1,200,000	
Property Dividends Payable		1,200,000
October 8, 2025		
No entry.		
October 23, 2025		
Property Dividends Payable	1,200,000	
Equity Investments		1,200,000

c. Entries for the 5% stock dividend are as follows.

December 1, 2025		
Retained Earnings*	3,500,000	
Common Stock Dividend Distributable**		1,000,000
Paid-in Capital in Excess of Par—Common Stock		2,500,000

*2,000,000 × .05 × $35 (fair value of the stock is used for small stock dividends)
**2,000,000 × .05 × $10

December 20, 2025		
Common Stock Dividend Distributable	1,000,000	
Common Stock		1,000,000

d. Entries for the 100% stock dividend are as follows.

December 1, 2025		
Retained Earnings	20,000,000	
Common Stock Dividend Distributable (2,000,000 × $10)		20,000,000

Par value of the stock is used for large stock dividends.

December 20, 2025		
Common Stock Dividend Distributable	20,000,000	
Common Stock		20,000,000

14.4 Presentation and Decision Analysis of Stockholders' Equity

LEARNING OBJECTIVE 4

Indicate how to present and analyze stockholders' equity.

Presentation

Balance Sheet

Illustration 14.16 shows a comprehensive stockholders' equity section from the balance sheet of Frost Company that includes most of the equity items we discussed in this chapter.

ILLUSTRATION 14.16
Comprehensive Stockholders' Equity Presentation

Frost Company
Stockholders' Equity
December 31, 2025

Capital stock		
Preferred stock, $100 par value, 7% cumulative, 100,000 shares authorized, 30,000 shares issued and outstanding		$ 3,000,000
Common stock, no-par, stated value $10 per share, 500,000 shares authorized, 400,000 shares issued		4,000,000
Common stock dividend distributable, 20,000 shares		200,000
Total capital stock		7,200,000
Additional paid-in capital		
Excess over par—preferred	$150,000	
Excess over stated value—common	840,000	990,000
Total paid-in capital		8,190,000
Retained earnings		4,360,000
Total paid-in capital and retained earnings		12,550,000
Less: Cost of treasury stock (2,000 shares, common)		190,000
Accumulated other comprehensive loss		360,000
Total stockholders' equity		$12,000,000

Frost should disclose the pertinent rights and privileges of the various securities outstanding. For example, companies must disclose all of the following (if appropriate): dividend and liquidation preferences, participation rights, call prices and dates, conversion or exercise prices and pertinent dates, sinking fund requirements, unusual voting rights, and significant terms of contracts to issue additional shares. Liquidation preferences should be disclosed in the equity section of the balance sheet, rather than in the notes to the financial statements, to emphasize the possible effect of this restriction on future cash flows. [5]

Disclosure of Restrictions on Retained Earnings

Many corporations restrict retained earnings or dividends, without any formal journal entries. Such restrictions are **best disclosed by note**. Parenthetical notations are sometimes used, but restrictions imposed by bond indentures and loan agreements commonly require an extended explanation. Notes provide a medium for more complete explanations and free the financial statements from abbreviated notations. The note disclosure should reveal the source of the

restriction, pertinent provisions, and the amount of retained earnings subject to restriction, or the amount not restricted.

Restrictions may be based on the retention of a certain retained earnings balance, the ability to maintain certain working capital requirements, additional borrowing, and other considerations. The example from the annual report of **Alberto-Culver Company** in **Illustration 14.17** shows a note disclosing potential restrictions on retained earnings and dividends.

Alberto-Culver Company

Note 3 (In part): The $200 million revolving credit facility, the term note, and the receivables agreement impose restrictions on such items as total debt, working capital, dividend payments, treasury stock purchases, and Interest expense. At year-end, the company was in compliance with these arrangements, and $220 million of consolidated retained earnings was not restricted as to the payment of dividends.

ILLUSTRATION 14.17 Disclosure of Restrictions on Retained Earnings and Dividends

Statement of Stockholders' Equity

The **statement of stockholders' equity** is frequently presented in the following basic format.

1. Balance at the beginning of the period.
2. Additions.
3. Deductions.
4. Balance at the end of the period.

Companies must disclose changes in the separate accounts comprising stockholders' equity, to make the financial statements sufficiently informative. Such changes may be disclosed in separate statements or in the basic financial statements or notes.

A **columnar format** for the presentation of changes in stockholders' equity items in published annual reports is gaining in popularity. **Illustration 14.18** shows the statement of stockholders' equity for Frost Company.

ILLUSTRATION 14.18 Columnar Format for Statement of Stockholders' Equity

Frost Company
For the Fiscal Year Ended December 31, 2025
(in $ thousands)

	Preferred Stock	APIC—Preferred Stock	Common Stock	APIC—Common Stock	Stock Div. Distrib.	Ret. Earni.	AOCI (Loss)	Treasury Stock	Total Equity
Bal., 12/31/24	$ 3,000.0	$ 150.0	$4,000.0	$840.0	$ 0.0	$3,980.9	$(403.2)	$(160.0)	$11,407.7
Unrealized gain							43.2		43.2
Stock dividend					200.0	(200.0)			0.0
Dividends on preferred						(121.0)			(121.0)
Dividends on common						(140.0)			(140.0)
Repurchase common stock								(30.0)	(30.0)
Net income (loss)						840.1			840.1
Bal., 12/31/25	$ 3,000.0	$ 150.0	$4,000.0	$840.0	$200.0	$4,360.0	$(360.0)	$(190.0)	$12,000.0

APIC: Additional paid-in capital.

AOCI: Accumulated other comprehensive income.

Preferred stock: $100 par value, 7% cumulative, 100,000 shares authorized, 30,000 shares issued and outstanding.

Common stock: No-par, stated value $10 per share, 500,000 shares authorized, 400,000 shares issued, 380,000 outstanding (20,000 treasury shares). Common stock dividend distributable, 20,000 shares issued in 2025.

Decision Analysis

Analysts use stockholders' equity ratios to evaluate a company's profitability and long-term solvency. In this section, we will use financial data from the insurance company **Allstate**'s annual report to illustrate three common ratios.

(in millions)	2020	2019	2018
Net income	$ 5,576	$ 4,847	
Preferred dividends	115	169	
Common dividends	680	658	
Common stockholders' equity	28,247	23,750	19,382
Preferred stockholders' equity	1,970	2,248	1,930

Return on Common Stockholders' Equity

The **return on common stockholders' equity**, often referred to as **return on equity (ROE)**, measures profitability from the common stockholders' viewpoint.

- This ratio shows how many dollars of net income the company earned for each dollar invested by the owners.
- ROE also helps investors judge the worthiness of a stock when the overall market is not doing well.

For example, **Best Buy** shares at one time dropped nearly 40%. But a review of its ROE during this period and since shows a steady return of 20-22% while the overall market ROE declined from 16% to 8%. More importantly, Best Buy and other stocks, such as **3M** and **Procter & Gamble**, recovered their lost market value, while other stocks with less robust ROEs stayed in the doldrums.

The formula for ROE is:

$$\text{ROE} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}}$$

We can calculate Allstate's ROE as follows.

$$\text{2020: } \frac{\$5{,}576 - \$115}{(\$28{,}247 + \$23{,}750) \div 2} = 21.01\% \qquad \text{2019: } \frac{\$4{,}847 - \$169}{(\$23{,}750 + \$19{,}382) \div 2} = 21.69\%$$

Financial ratios like ROE are not as meaningful if we have nothing to compare them to. For Allstate, it is helpful to compare its ROE over time, noting that the ratio remained relatively stable from 2019 to 2020. Additionally, it is helpful to compare ratios to other companies in the same industry. For example, **Progressive**, another insurance company, had a ROE of 34%.

When preferred stock is present, income available to common stockholders equals net income less preferred dividends. Similarly, the amount of common stock equity used in this ratio equals **total stockholders' equity less the par value of preferred stock**.

Companies can improve return on common stockholders' equity through the prudent use of debt or preferred stock financing. **Trading on the equity** describes the practice of using borrowed money or issuing preferred stock in hopes of obtaining a higher rate of return on the money used.

- Shareholders win if return on the assets is higher than the cost of financing these assets.
- When this happens, the return on common stockholders' equity will exceed the return on total assets.

In short, the company is "trading on the equity at a gain."

In this situation, the money obtained from bondholders or preferred stockholders earns enough to pay the interest or preferred dividends and leaves a profit for the common stockholders. On the other hand, if the cost of the financing is higher than the rate earned on the assets, the company is trading on equity at a loss and stockholders lose.

Payout Ratio

Another ratio of interest to investors, the **payout ratio**, is the ratio of cash dividends to net income. The payout ratio is calculated as follows.

$$\text{Payout Ratio} = \frac{\text{Cash Dividends Paid to Common Stockholders}}{\text{Net Income Available to Common Stockholders}}$$

Note this ratio focuses on dividends paid to common stockholders only. If preferred stock is outstanding, then preferred stock dividends must be subtracted from net income to arrive at net income available to common stockholders.

We can calculate Allstate's payout ratio as follows.

$$2020: \frac{\$680}{\$5{,}576 - \$115} = 12.45\% \qquad 2019: \frac{\$658}{\$4{,}847 - \$169} = 14.07\%$$

Allstate paid out 12.45% of the income available to common shareholders as a dividend in 2020, a slight decrease from 2019.

Book Value per Share

A much-used basis for evaluating net worth is found in the book value or equity value per share of stock. **Book value per share** of stock is the amount each share would receive if the company were liquidated **on the basis of amounts reported on the balance sheet**. However, the figure loses much of its relevance if the valuations on the balance sheet fail to approximate fair value of the assets. Book value per share is calculated as follows.

$$\text{Book Value per Share} = \frac{\text{Common Stockholders' Equity}}{\text{Outstanding Common Shares}}$$

Allstate reports 304 and 319 million shares of common stock outstanding for 2020 and 2019, respectively. We can calculate Allstate's book value per share as follows.

$$2020: \frac{\$28{,}247}{304} = \$92.92 \qquad 2019: \frac{\$23{,}750}{319} = \$74.45$$

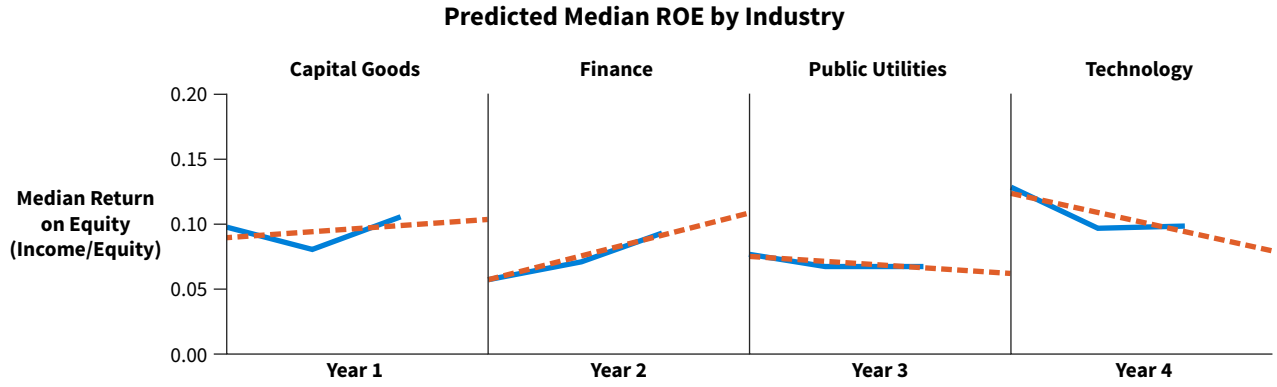
This tells us that if Allstate were to liquidate its balance sheet, common shareholders would get approximately $93 for each share they own. Investors can use this ratio to understand if a stock is undervalued by comparing the book value per share to the market price per share. At December 31, 2020, Allstate's common stock was trading at $109.93 per share, indicating that Allstate was not undervalued at that time.

Analytics in Action: Track Those Ratios!

Financial ratios can be a powerful tool when analyzing a company, especially if we are able to track those ratios over time and benchmark against industry averages. The more data, the better! And to help with all this data, some companies are devoted to pulling financial statement and other data from public company filings and making it available for investors and analysts.

Using machine learning, financial data can be pulled from public reports and standardized for use as benchmark data. This isn't limited to financial data either. Using artificial intelligence, these companies can analyze vast amounts of financial text included in public documents to gain insights on a company's cultural values, beliefs and strategies, competitive advantages, and more.

Using benchmark financial data, investors could create visualizations like the following charts. Showing historical ROE by industry with a trendline (dashes) helps investors to forecast future results.



Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

APPENDIX **14A**

Dividend Preferences and Book Value per Share

LEARNING OBJECTIVE *5

Explain the different types of preferred stock dividends and their effect on book value per share.

Dividend Preferences

Illustrations 14A.1 to 14A.4 indicate the **effects** of various **dividend preferences** on dividend distributions to common and preferred stockholders. Assume that in 2025, Mason Company is to distribute $50,000 as cash dividends, its outstanding common stock has a par value of $400,000, and its 6% preferred stock has a par value of $100,000. Mason would distribute dividends to each class, employing the assumptions given, as follows.

1. If the preferred stock is noncumulative and nonparticipating:

ILLUSTRATION 14A.1 Dividend Distribution, Noncumulative and Nonparticipating Preferred

	Preferred	Common	Total
6% of $100,000	$6,000		$ 6,000
The remainder to common		$44,000	44,000
Totals	$6,000	$44,000	$50,000

2. If the preferred stock is cumulative and nonparticipating, and Mason Company did not pay dividends on the preferred stock in the preceding two years:

ILLUSTRATION 14A.2 Dividend Distribution, Cumulative and Nonparticipating Preferred, with Dividends in Arrears

	Preferred	Common	Total
Dividends in arrears, 6% of $100,000 for 2 years	$12,000		$12,000
Current year's dividend, 6% of $100,000	6,000		6,000
The remainder to common		$32,000	32,000
Totals	$18,000	$32,000	$50,000

3. If the preferred stock is noncumulative and is fully participating:[14]

ILLUSTRATION 14A.3 Dividend Distribution, Noncumulative and Fully Participating Preferred

	Preferred	Common	Total
Current year's dividend, 6%	$ 6,000	$24,000	$30,000
Participating dividend of 4%	4,000	16,000	20,000
Totals	$10,000	$40,000	$50,000

The participating dividend was determined as follows:		
Current year's dividend:		
Preferred, 6% of $100,000 =	$ 6,000	
Common, 6% of $400,000 =	24,000	$30,000
Amount available for participation ($50,000 − $30,000)		$20,000
Par value of stock that is to participate ($100,000 + $400,000)		$500,000
Rate of participation ($20,000 ÷ $500,000)		4%
Participating dividend:		
Preferred, 4% of $100,000		$ 4,000
Common, 4% of $400,000		16,000
		$20,000

4. If the preferred stock is cumulative and is fully participating, and Mason Company did not pay dividends on the preferred stock in the preceding two years:

ILLUSTRATION 14A.4 Dividend Distribution, Cumulative and Fully Participating Preferred, with Dividends in Arrears

	Preferred	Common	Total
Dividends In arrears, 6% of $100,000 for 2 years	$12,000		$12,000
Current year's dividend, 6%	6,000	$24,000	30,000
Participating dividend, 1.6% ($8,000 ÷ $500,000)	1,600	6,400	8,000
Totals	$19,600	$30,400	$50,000

[14]When preferred stock is participating, there may be different agreements as to how the participation feature is to be executed. However, in the absence of any specific agreement the following procedure is recommended:

a. After the preferred stock is assigned its current year's dividend, the common stock will receive a "like" percentage of par value outstanding. In example (3) shown in Illustration 14A.3, this amounts to 6% of $400,000.

b. In example (3), shown in Illustration 14A.3, the remainder of the declared dividend is $20,000. We divide this amount by total par value ($500,000) to find the rate of participation to be applied to each class of stock. In this case, the rate of participation is 4% ($20,000 ÷ $500,000), which we then multiply by the par value of each class of stock to determine the amount of participation.

Book Value per Share

Book value per share in its simplest form is computed as net assets divided by outstanding common shares at the end of the year. The computation of book value per share becomes more complicated if a company has preferred stock in its capital structure. For example, if preferred dividends are in arrears, if the preferred stock is participating, or if preferred stock has a redemption or liquidating value higher than its carrying amount, the company must allocate retained earnings between the preferred and common stockholders in computing book value.

To illustrate, assume that the situation shown in **Illustration 14A.5** exists.

ILLUSTRATION 14A.5
Computation of Book Value per Share—No Dividends in Arrears

Stockholders' equity	Preferred	Common
Preferred stock, 5%	$300,000	
Common stock		$400,000
Excess of issue price over par of common stock		37,500
Retained earnings		162,582
Totals	$300,000	$600,082
Common shares outstanding		4,000
Book value per share		$150.02

The situation in Illustration 14A.5 assumes that no preferred dividends are in arrears and that the preferred is not participating. Now assume that the same facts exist except that the 5% preferred is cumulative, participating up to 8%, and that dividends for three years before the current year are in arrears. **Illustration 14A.6** shows how to compute the book value of the common stock, assuming that no action has yet been taken concerning dividends for the current year.

ILLUSTRATION 14A.6
Computation of Book Value per Share—with Dividends in Arrears

Stockholders' equity	Preferred	Common
Preferred stock, 5%	$300,000	
Common stock		$400,000
Excess of issue price over par of common stock		37,500
Retained earnings:		
Dividends in arrears (3 years at 5% a year)	45,000	
Current year requirement at 5%	15,000	20,000
Participating—additional 3%	9,000	12,000
Remainder to common		61,582
Totals	$369,000	$531,082
Shares outstanding		4,000
Book value per share		$132.77

In connection with the book value computation, the analyst must know how to handle the following items: the number of authorized and unissued shares; the number of treasury shares on hand; any commitments with respect to the issuance of unissued shares or the reissuance of treasury shares; and the relative rights and privileges of the various types of stock authorized. As an example, if the liquidating value of the preferred stock is higher than its carrying amount, the liquidating amount should be used in the book value computation.

Review and Practice

Key Terms Review

accumulated other comprehensive income 14-7
Additional Paid-in Capital 14-8
book value per share 14-39
callable preferred stock 14-15
cash dividends 14-26
common stock 14-7
contributed (paid-in) capital 14-7
convertible preferred stock 14-14
cost method 14-19
cumulative preferred stock 14-14
dividend in arrears 14-14
earned capital 14-7
large stock dividend 14-32
liquidating dividends 14-29
lump-sum sales 14-10
mandatorily redeemable preferred stock 14-16
no-par stock 14-9
outstanding stock 14-20
Paid-in Capital in Excess of Par—Common Stock 14-8
par (stated) value method 14-19
participating preferred stock 14-14
payout ratio 14-39
preferred stock 14-13
property dividends 14-28
redeemable preferred stock 14-15
residual interest 14-6
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return on common stockholders' equity 14-38
secret reserves 14-12
small (ordinary) stock dividends 14-30
stated value 14-9
statement of stockholders' equity 14-37
stock dividends 14-30
stockholders' (owners') equity 14-6
stock split 14-32
trading on the equity 14-38
treasury stock 14-19
watered stock 14-12

Learning Objectives Review

1 Describe the corporate form and the issuance of shares of stock.

Among the **specific characteristics of the corporate form** that affect accounting are the (1) influence of state corporate law, (2) use of the capital stock or share system, and (3) development of a variety of ownership interests. In the absence of restrictive provisions, each share of stock carries the right to share proportionately in (1) profits and losses, (2) management (the right to vote for directors), (3) corporate assets upon liquidation, and (4) any new issues of stock of the same class (called the preemptive right).

Stockholders' or owners' equity is classified into two categories: contributed capital and earned capital. Contributed capital (paid-in capital) describes the total amount paid in on capital stock. Put another way, it is the amount that stockholders invested in the corporation for use in the business. Contributed capital includes items such as the par value of all outstanding capital stock and premiums less any discounts on issuance. Earned capital is the capital that develops if the business operates profitably; it consists of all undistributed income that remains invested in the company (retained earnings and accumulated other comprehensive income).

Accounts are kept for the following **different types of stock.** *Par value stock:* (a) preferred stock or common stock, (b) paid-in capital in excess of par or additional paid-in capital, and (c) discount on stock. *No-par stock:* common stock or common stock and additional paid-in capital, if stated value used.

Stock issued in combination with other securities (lump-sum sales): The two methods of allocation available are (a) the proportional method and (b) the incremental method. **Stock issued in noncash transactions:** When issuing stock for services or property other than cash, the company should record the property or services at either the fair value of the stock issued, or the fair value of the noncash consideration received, whichever is more clearly determinable.

Preferred stock is a special class of shares that possesses certain preferences or features not possessed by the common stock. The features that are most often associated with preferred stock issues are (1) preference as to dividends, (2) preference as to assets in the event of liquidation, (3) convertible into common stock, (4) callable at the option of the corporation, and (5) nonvoting. At issuance, the accounting for preferred stock is similar to that for common stock. When convertible preferred stock is converted, a company uses the book value method. It debits Preferred Stock, along with any related Paid-in Capital in Excess of Par—Preferred Stock and credits Common Stock and Paid-in Capital in Excess of Par—Common Stock (if an excess exists).

2 Describe the accounting and reporting for reacquisition of shares.

The cost method is generally used in accounting for treasury stock. This method derives its name from the fact that a company maintains the Treasury Stock account at the cost of the shares purchased. Under the cost method, a company debits the Treasury Stock account for the cost of the shares acquired and credits it for this same cost upon reissuance. The price received for the stock when originally issued does not affect the entries to record the acquisition and reissuance of the treasury stock.

3 Explain the accounting and reporting issues related to dividends.

The state incorporation laws normally provide information concerning the legal restrictions related to the payment of dividends. Corporations rarely pay dividends in an amount equal to the legal limit. This is due, in part, to the fact that companies use assets

represented by undistributed earnings to finance future operations of the business. If a company is considering declaring a dividend, it must ask two preliminary questions. (1) Is the condition of the corporation such that the dividend is **legally permissible**? (2) Is the condition of the corporation such that a dividend is **economically sound**?

Dividends are of the following types: (1) cash dividends, (2) property dividends, (3) liquidating dividends (dividends based on other than retained earnings), and (4) stock dividends (the issuance by a corporation of its own stock to its stockholders on a pro rata basis, but without receiving consideration).

Generally accepted accounting principles require that the accounting for **small stock dividends** (less than 20–25%) rely on the fair value of the stock issued. When declaring a common stock dividend, a company debits Retained Earnings at the fair value of the stock it distributes. The entry includes a credit to Common Stock Dividend Distributable at par value times the number of shares, with any excess credited to Paid-in Capital in Excess of Par—Common Stock. If the number of shares issued exceeds 20–25% of the shares outstanding **(large stock dividend)**, it debits Retained Earnings at par value and credits Common Stock Distributable—there is no additional paid-in capital.

A **stock dividend** is a capitalization of retained earnings that reduces retained earnings and increases certain contributed capital accounts. The par value per share and total stockholders' equity remain unchanged with a stock dividend, and all stockholders retain their same proportionate share of ownership. A **stock split** results in an increase or decrease in the number of shares outstanding, with a corresponding decrease or increase in the par or stated value per share. No accounting entry is required for a stock split.

4 Indicate how to present and analyze stockholders' equity.

The stockholders' equity section of a balance sheet includes capital stock, additional paid-in capital, and retained earnings. A company might also present additional items such as treasury stock and accumulated other comprehensive income. Companies often provide a statement of stockholders' equity. Common ratios that use stockholders' equity amounts are **return on common stockholders' equity**, **payout ratio**, and **book value per share**.

***5 Explain the different types of preferred stock dividends and their effect on book value per share.**

The dividend preferences of preferred stock affect the dividends paid to stockholders. Preferred stock can be (1) cumulative or noncumulative, and (2) fully participating, partially participating, or nonparticipating. If preferred dividends are in arrears, if the preferred stock is participating, or if preferred stock has a redemption or liquidation value higher than its carrying amount, allocate retained earnings between preferred and common stockholders in computing book value per share.

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Exercises, Problems, Problem Solution Walkthrough Videos, Data Analytics Activities, and many more assessment tools and resources are available for practice in Wiley Course Resources.

Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. In the absence of restrictive provisions, what are the basic rights of stockholders of a corporation?
2. Why is a preemptive right important?
3. Distinguish between common and preferred stock.
4. Why is the distinction between paid-in capital and retained earnings important?
5. Explain each of the following terms: authorized capital stock, unissued capital stock, issued capital stock, outstanding capital stock, and treasury stock.
6. What is meant by par value, and what is its significance to stockholders?
7. Describe the accounting for the issuance for cash of no-par value common stock at a price in excess of the stated value of the common stock.
8. Explain the difference between the proportional method and the incremental method of allocating the proceeds of lump-sum sales of capital stock.
9. What are the different bases for stock valuation when assets other than cash are received for issued shares of stock?
10. Explain how underwriting costs and accounting and legal fees associated with the issuance of stock should be recorded.
11. What features or rights may alter the character of preferred stock?
12. Dagwood Inc. recently noted that its 4% preferred stock and 4% participating preferred stock, which are both cumulative, have priority as to dividends up to 4% of their par value. Its participating preferred stock participates equally with the common stock in any dividends in excess of 4%. What is meant by the term participating? Cumulative?

13. Where in the financial statements is preferred stock normally reported?

14. For what reasons might a corporation purchase its own stock?

15. Discuss the propriety of showing:

a. Treasury stock as an asset.

b. "Gain" or "loss" on sale of treasury stock as additions to or deductions from income.

c. Dividends received on treasury stock as income.

16. List possible sources of additional paid-in capital.

17. Satchel Inc. purchases 10,000 shares of its own previously issued $10 par common stock for $290,000. Assuming the shares are held in the treasury with intent to reissue, what effect does this transaction have on (a) net income, (b) total assets, (c) total paid-in capital, and (d) total stockholders' equity?

18. Indicate how each of the following accounts should be classified in the stockholders' equity section.

a. Common Stock.

b. Retained Earnings.

c. Paid-in Capital in Excess of Par—Common Stock.

d. Treasury Stock.

e. Paid-in Capital from Treasury Stock.

f. Paid-in Capital in Excess of Stated Value—Common Stock.

g. Preferred Stock.

19. What factors influence the dividend policy of a company?

20. What are the principal considerations of a board of directors in making decisions involving dividend declarations? Discuss briefly.

21. Dividends are sometimes said to have been paid "out of retained earnings." What is the error, if any, in that statement?

22. Distinguish among: cash dividends, property dividends, liquidating dividends, and stock dividends.

23. Describe the accounting entry for a stock dividend, if any. Describe the accounting entry for a stock split, if any.

24. Stock splits and stock dividends may be used by a corporation to change the number of shares of its stock outstanding.

a. What is meant by a stock split effected in the form of a dividend?

b. From an accounting viewpoint, explain how the stock split effected in the form of a dividend differs from an ordinary stock dividend.

c. How should a stock dividend that has been declared but not yet issued be classified in a balance sheet? Why?

25. The following comment appeared in the notes of Colorado Corporation's annual report: "Such distributions, representing proceeds from the sale of Sarazan, Inc., were paid in the form of partial liquidating dividends and were in lieu of a portion of the Company's ordinary cash dividends." How would a partial liquidating dividend be accounted for in the financial records?

26. This comment appeared in the annual report of MacCloud Inc.: "The Company could pay cash or property dividends on the Class A common stock without paying cash or property dividends on the Class B common stock. But if the Company pays any cash or property dividends on the Class B common stock, it would be required to pay at least the same dividend on the Class A common stock." How is a property dividend accounted for in the financial records?

27. For what reasons might a company restrict a portion of its retained earnings?

28. How are restrictions of retained earnings reported?

*29. McNabb Corp. had $100,000 of 7%, $20 par value preferred stock and 12,000 shares of $25 par value common stock outstanding throughout 2025.

a. Assuming that total dividends declared in 2025 were $64,000, and that the preferred stock is not cumulative but is fully participating, common stockholders should receive 2025 dividends of what amount?

b. Assuming that total dividends declared in 2025 were $64,000, and that the preferred stock is fully participating and cumulative with preferred dividends in arrears for 2024, preferred stockholders should receive 2025 dividends totaling what amount?

c. Assuming that total dividends declared in 2025 were $30,000, that the preferred stock is cumulative, nonparticipating, and was issued on January 1, 2024, and that $5,000 of preferred dividends were declared and paid in 2024, the common stockholders should receive 2025 dividends totaling what amount?

Brief Exercises

BE14.1 (LO 1) Buttercup Corporation issued 300 shares of $10 par value common stock for $4,500. Prepare Buttercup's journal entry.

BE14.2 (LO 1) Swarten Corporation issued 600 shares of no-par common stock for $8,200. Prepare Swarten's journal entry if (a) the stock has no stated value, and (b) the stock has a stated value of $2 per share.

BE14.3 (LO 1, 2) Wilco Corporation has the following account balances at December 31, 2025.

Common stock, $5 par value	$ 510,000
Treasury stock	90,000
Retained earnings	2,340,000
Paid-in capital in excess of par—common stock	1,320,000

Prepare Wilco's December 31, 2025, stockholders' equity section.

BE14.4 (LO 1) Ravonette Corporation issued 300 shares of $10 par value common stock and 100 shares of $50 par value preferred stock for a lump sum of $13,500. The common stock has a market price of $20 per share, and the preferred stock has a market price of $90 per share. Prepare the journal entry to record the issuance.

BE14.5 (LO 1) On February 1, 2025, Buffalo Corporation issued 3,000 shares of its $5 par value common stock for land worth $31,000. Prepare the February 1, 2025, journal entry.

BE14.6 (LO 1) Moonwalker Corporation issued 2,000 shares of its $10 par value common stock for $60,000. Moonwalker also incurred $1,500 of costs associated with issuing the stock. Prepare Moonwalker's journal entry to record the issuance of the company's stock.

BE14.7 (LO 1) Hinges Corporation issued 500 shares of $100 par value preferred stock for $61,500. Prepare Hinges's journal entry.

BE14.8 (LO 2) Sprinkle Inc. has outstanding 10,000 shares of $10 par value common stock. On July 1, 2025, Sprinkle reacquired 100 shares at $87 per share. On September 1, Sprinkle reissued 60 shares at $90 per share. On November 1, Sprinkle reissued 40 shares at $83 per share. Prepare Sprinkle's journal entries to record these transactions using the cost method.

BE14.9 (LO 2) Arantxa Corporation has outstanding 20,000 shares of $5 par value common stock. On August 1, 2025, Arantxa reacquired 200 shares at $80 per share. On November 1, Arantxa reissued the 150 shares at $70 per share. Arantxa had no previous treasury stock transactions. Prepare Arantxa's journal entries to record these transactions using the cost method.

BE14.10 (LO 2) Refer to the information in BE14.9. Prepare the entry to retire the treasury shares remaining following the November 1, 2025, reissuance. The shares were initially issued for $50 per share.

BE14.11 (LO 3) Woolford Inc. declared a cash dividend of $1.00 per share on its 2 million outstanding shares. The dividend was declared on August 1, payable on September 9 to all stockholders of record on August 15. Prepare all journal entries necessary on those three dates.

BE14.12 (LO 3) Cole Inc. owns shares of Marlin Corporation stock. At December 31, 2025, the securities were carried in Cole's accounting records at their cost of $875,000, which equals their fair value. On September 21, 2026, when the fair value of the securities was $1,200,000, Cole declared a property dividend whereby the Marlin securities are to be distributed on October 23, 2026, to stockholders of record on October 8, 2026. Prepare all journal entries necessary on those three dates.

BE14.13 (LO 3) Graves Mining Company declared, on April 20, a dividend of $500,000 payable on June 1. Of this amount, $125,000 is a return of capital. Prepare the April 20 and June 1 entries for Graves.

BE14.14 (LO 3) Green Day Corporation has outstanding 400,000 shares of $10 par value common stock. The corporation declares a 5% stock dividend when the fair value of the stock is $65 per share. Prepare the journal entries for Green Day Corporation for both the date of declaration and the date of distribution.

BE14.15 (LO 3) Use the information from BE14.14, but assume Green Day Corporation declared a 100% stock dividend rather than a 5% stock dividend. Prepare the journal entries for both the date of declaration and the date of distribution.

***BE14.16 (LO 5)** Nottebart Corporation has outstanding 10,000 shares of $100 par value, 6% preferred stock and 60,000 shares of $10 par value common stock. The preferred stock was issued in January 2025, and no dividends were declared in 2025 or 2026. In 2027, Nottebart declares a cash dividend of $300,000. How will the dividend be shared by common and preferred stockholders if the preferred is (a) noncumulative and (b) cumulative?

Exercises

E14.1 (LO 1) Excel **(Recording the Issuances of Common Stock)** During its first year of operations, Collin Raye Corporation had the following transactions pertaining to its common stock.

Jan. 10	Issued 80,000 shares for cash at $6 per share.
Mar. 1	Issued 5,000 shares to attorneys in payment of a bill for $35,000 for services rendered in helping the company to incorporate.
July 1	Issued 30,000 shares for cash at $8 per share.
Sept. 1	Issued 60,000 shares for cash at $10 per share.

Instructions

a. Prepare the journal entries for these transactions, assuming that the common stock has a par value of $5 per share.

b. Prepare the journal entries for these transactions, assuming that the common stock is no-par with a stated value of $3 per share.

E14.2 (LO 1) (Recording the Issuance of Common and Preferred Stock) Kathleen Battle Corporation was organized on January 1, 2025. It is authorized to issue 10,000 shares of 8%, $100 par value preferred stock, and 500,000 shares of no-par common stock with a stated value of $1 per share. The following stock transactions were completed during the first year.

Jan. 10	Issued 80,000 shares of common stock for cash at $5 per share.
Mar. 1	Issued 5,000 shares of preferred stock for cash at $108 per share.
Apr. 1	Issued 24,000 shares of common stock for land. The asking price of the land was $90,000; the fair value of the land was $80,000.
May 1	Issued 80,000 shares of common stock for cash at $7 per share.
Aug. 1	Issued 10,000 shares of common stock to attorneys in payment of their bill of $50,000 for services rendered in helping the company organize.
Sept. 1	Issued 10,000 shares of common stock for cash at $9 per share.
Nov. 1	Issued 1,000 shares of preferred stock for cash at $112 per share.

Instructions

Prepare the journal entries to record the above transactions.

E14.3 (LO 1, 2) (Stock Issued for Land) Twenty-five thousand shares reacquired by Elixir Corporation for $53 per share were exchanged for undeveloped land that has an appraised value of $1,700,000. At the time of the exchange, the common stock was trading at $62 per share on an organized exchange.

Instructions

a. Prepare the journal entry to record the acquisition of land assuming that the purchase of the stock was originally recorded using the cost method.

b. Briefly identify the possible alternatives (including those that are totally unacceptable) for quantifying the cost of the land and briefly support your choice.

E14.4 (LO 1) (Lump-Sum Sale of Stock with Bonds) Faith Evans Corporation is a regional company which is an SEC registrant. The corporation's securities are thinly traded on NASDAQ. Faith Evans Corp. has issued 10,000 units. Each unit consists of a $500 par, 12% subordinated debenture and 10 shares of $5 par common stock. The units were sold to outside investors for cash at $880 per unit. Prior to this sale, the 2-week ask price of common stock was $40 per share. Twelve percent is a reasonable market yield for the debentures, and therefore the par value of the bonds is equal to the fair value.

Instructions

a. Prepare the journal entry to record Evans' transaction, under the following conditions.

1. Employing the incremental method.
2. Employing the proportional method, assuming the recent price quote on the common stock reflects fair value.

b. Briefly explain which method is, in your opinion, the better method.

E14.5 (LO 1) (Lump-Sum Sales of Stock with Preferred Stock) Coldplay Inc. issues 500 shares of $10 par value common stock and 100 shares of $100 par value preferred stock for a lump sum of $100,000.

Instructions

a. Prepare the journal entry for the issuance when the market price of the common shares is $165 each and market price of the preferred is $230 each. (Round to nearest dollar.)

b. Prepare the journal entry for the issuance when only the market price of the common stock is known and it is $170 per share.

E14.6 (LO 1, 2) (Stock Issuances and Repurchase) Lindsey Hunter Corporation is authorized to issue 50,000 shares of $5 par value common stock. During 2025, Lindsey Hunter took part in the following selected transactions.

a. Issued 5,000 shares of stock at $45 per share, less costs related to the issuance of the stock totaling $7,000.

b. Issued 1,000 shares of stock for land appraised at $50,000. The stock was actively traded on a national stock exchange at approximately $46 per share on the date of issuance.

c. Purchased 500 shares of treasury stock at $43 per share. The treasury shares purchased were issued in 2021 at $40 per share.

d. Retired the treasury shares purchased in part (c).

Instructions

Prepare the journal entries to record these transactions using the cost method.

E14.7 (LO 2) (Effect of Treasury Stock Transactions on Financials) Joe Dumars Company has outstanding 40,000 shares of $5 par common stock which had been issued at $30 per share. Joe Dumars then entered into the following transactions.

1. Purchased 5,000 treasury shares at $45 per share.
2. Resold 2,000 of the treasury shares at $49 per share.
3. Resold 500 of the treasury shares at $40 per share.

Instructions

Use the following code to indicate the effect each of the three transactions has on the financial statement categories listed in the table below, assuming Joe Dumars Company uses the cost method (I = Increase; D = Decrease; NE = No effect).

	Assets	Liabilities	Stockholders' Equity	Paid-in Capital	Retained Earnings	Net Income
1.						
2.						
3.						

E14.8 (LO 1, 2) (Correcting Entries for Equity Transactions) Pistons Inc. recently hired a new accountant with extensive experience in accounting for partnerships. Because of the pressure of the new job, the accountant was unable to review what he had learned earlier about corporation accounting. During the first month, he made the following entries for the corporation's capital stock.

May	2	Cash	192,000	
		Capital Stock		192,000
		(Issued 12,000 shares of $5 par value common stock at $16 per share)		
	10	Cash	600,000	
		Capital Stock		600,000
		(Issued 10,000 shares of $30 par value preferred stock at $60 per share)		
	15	Capital Stock	15,000	
		Cash		15,000
		(Purchased 1,000 shares of common stock for the treasury at $15 per share)		
	31	Cash	8,500	
		Capital Stock		5,000
		Gain on Sale of Stock		3,500
		(Sold 500 shares of treasury stock at $17 per share)		

Instructions

On the basis of the explanation for each entry, prepare the entries that should have been made for the capital stock transactions.

E14.9 (LO 1, 3) (Preferred Stock Entries and Dividends) Otis Thorpe Corporation has 10,000 shares of $100 par value, 8%, preferred stock and 50,000 shares of $10 par value common stock outstanding at December 31, 2025.

Instructions

Answer the questions in each of the following independent situations.

a. If the preferred stock is cumulative and dividends were last paid on the preferred stock on December 31, 2022, (1) what are the dividends in arrears on December 31, 2025, and (2) how should these dividends be reported?

b. If the preferred stock is convertible into seven shares of $10 par value common stock and 4,000 shares are converted, what entry is required for the conversion assuming the preferred stock was issued at par value?

c. If the preferred stock was issued at $107 per share, how should the preferred stock be reported in the stockholders' equity section?

E14.10 (LO 2, 4) (Analysis of Equity Data and Equity Section Preparation) For a recent 2-year period, the balance sheet of Santana Dotson Company showed the following stockholders' equity data at December 31 (in millions).

	2025	2024
Additional paid-in capital	$ 931	$ 817
Common stock	545	540
Retained earnings	7,167	5,226
Treasury stock	1,564	918
Total stockholders' equity	$7,079	$5,665
Common stock shares issued	218	216
Common stock shares authorized	500	500
Treasury stock shares	34	27

Instructions

a. Answer the following questions.

1. What is the par value of the common stock?

2. What is the cost per share of treasury stock at December 31, 2025, and at December 31, 2024?

b. Prepare the stockholders' equity section at December 31, 2025.

E14.11 (LO 3, 4) (Equity Items on the Balance Sheet) The following are selected transactions that may affect stockholders' equity.

1. Recorded accrued interest earned on a note receivable.

2. Declared a cash dividend.

3. Declared and distributed a stock split.

4. Approved a retained earnings restriction.

5. Recorded the expiration of insurance coverage that was previously recorded as prepaid insurance.

6. Paid the cash dividend declared in item 2 above.

7. Recorded accrued interest expense on a note payable.

8. Declared a stock dividend.

9. Distributed the stock dividend declared in item 8.

Instructions

Indicate the effect each of the nine transactions has on the financial statement elements listed using the following headings. Use the following code: I = Increase, D = Decrease, NE = No effect.

Item	Assets	Liabilities	Stockholders' Equity	Paid-in Capital	Retained Earnings	Net Income

E14.12 (LO 3) (Cash Dividend and Liquidating Dividend) Lotoya Davis Corporation has 10 million shares of common stock issued and outstanding. On June 1, the board of directors voted an 80 cents per share cash dividend to stockholders of record as of June 14, payable June 30.

Instructions

a. Prepare the journal entry for each of the dates above assuming the dividend represents a distribution of earnings.

b. How would the entry differ if the dividend were a liquidating dividend?

E14.13 (LO 3) (Stock Split and Stock Dividend) The common stock of Alexander Hamilton Inc. is currently selling at $120 per share. The directors wish to reduce the share price and increase share volume prior to a new issue. The per share par value is $10; book value is $70 per share. Nine million shares are issued and outstanding.

Instructions

Prepare the necessary journal entries assuming the following.

a. The board votes a 2-for-1 stock split.

b. The board votes a 100% stock dividend.

c. Briefly discuss the accounting and securities market differences between these two methods of increasing the number of shares outstanding.

E14.14 (LO 3) (Entries for Stock Dividends and Stock Splits) The stockholders' equity accounts of G.K. Chesterton Company have the following balances on December 31, 2025.

Common stock, $10 par, 300,000 shares issued and outstanding	$3,000,000
Paid-in capital in excess of par—common stock	1,200,000
Retained earnings	5,600,000

Shares of G.K. Chesterton Company stock are currently selling on the Midwest Stock Exchange at $37.

Instructions

Prepare the appropriate journal entries for each of the following cases.

a. A stock dividend of 5% is declared and issued.

b. A stock dividend of 100% is declared and issued.

c. A 2-for-1 stock split is declared and issued.

E14.15 (LO 3) Excel (Dividend Entries) The following data were taken from the balance sheet accounts of Masefield Corporation on December 31, 2024.

Current assets	$540,000
Debt investments (trading)	624,000
Common stock (par value $10)	500,000
Paid-in capital in excess of par	150,000
Retained earnings	840,000

Instructions

Prepare the required journal entries for the following unrelated items.

a. A 5% stock dividend is declared and distributed at a time when the market price per share is $39.

b. The par value of the common stock is reduced to $2 with a 5-for-1 stock split.

c. A dividend is declared January 5, 2025, and paid January 25, 2025, in bonds held as an investment. The bonds have a book value of $100,000 and a fair value of $135,000.

E14.16 (LO 4) (Computation of Retained Earnings) The following information has been taken from the ledger accounts of Isaac Stern Corporation.

Total income since incorporation	$317,000
Total cash dividends paid	60,000
Total value of stock dividends distributed	30,000
Gains on treasury stock transactions	18,000
Unamortized discount on bonds payable	32,000

Instructions

Determine the current balance of retained earnings.

E14.17 (LO 4) (Stockholders' Equity Section) Bruno Corporation's post-closing trial balance at December 31, 2025, is as follows.

Bruno Corporation Post-Closing Trial Balance December 31, 2025		
	Dr.	**Cr.**
Accounts payable		$ 310,000
Accounts receivable	$ 480,000	
Accumulated depreciation—buildings		185,000
Additional paid-in capital in excess of par—common		1,300,000
From treasury stock		160,000
Allowance for doubtful accounts		30,000
Bonds payable		300,000
Buildings	1,450,000	
Cash	190,000	
Common stock ($1 par)		200,000
Dividends payable (preferred stock—cash)		4,000
Inventory	560,000	
Land	400,000	
Preferred stock ($50 par)		500,000
Prepaid expenses	40,000	
Retained earnings		301,000
Treasury stock (common at cost)	170,000	
Totals	$3,290,000	$3,290,000

At December 31, 2025, Bruno had the following number of common and preferred shares.

	Common	**Preferred**
Authorized	600,000	60,000
Issued	200,000	10,000
Outstanding	190,000	10,000

The dividends on preferred stock are $4 cumulative. In addition, the preferred stock has a preference in liquidation of $50 per share.

Instructions

Prepare the stockholders' equity section of Bruno's balance sheet at December 31, 2025.

(AICPA adapted)

E14.18 (LO 2, 3, 4) Groupwork (Dividends and Stockholders' Equity Section) Anne Cleves Company reported the following amounts in the stockholders' equity section of its December 31, 2024, balance sheet.

Preferred stock, 10%, $100 par (10,000 shares authorized, 2,000 shares issued)	$200,000
Common stock, $5 par (100,000 shares authorized, 20,000 shares issued)	100,000
Additional paid-in capital	125,000
Retained earnings	450,000
Total	$875,000

During 2025, Cleves took part in the following transactions concerning stockholders' equity.

1. Paid the annual 2024 $10 per share dividend on preferred stock and a $2 per share dividend on common stock. These dividends had been declared on December 31, 2024.
2. Purchased 1,700 shares of its own outstanding common stock for $40 per share. Cleves uses the cost method.
3. Reissued 700 treasury shares for land valued at $30,000.
4. Issued 500 shares of preferred stock at $105 per share.
5. Declared a 10% stock dividend on the outstanding common stock when the stock is selling for $45 per share.

6. Issued the stock dividend.
7. Declared the annual 2025 $10 per share dividend on preferred stock and the $2 per share dividend on common stock. These dividends are payable in 2026.

Instructions

a. Prepare journal entries to record the transactions described above.

b. Prepare the December 31, 2025, stockholders' equity section. Assume 2025 net income was $330,000.

E14.19 (LO 4) (Comparison of Alternative Forms of Financing) Shown below is the liabilities and stockholders' equity section of the balance sheet for Jana Kingston Company and Mary Ann Benson Company. Each has assets totaling $4,200,000.

Jana Kingston Co.		Mary Ann Benson Co.	
Current liabilities	$ 300,000	Current liabilities	$ 600,000
Long-term debt, 10%	1,200,000	Common stock ($20 par)	2,900,000
Common stock ($20 par)	2,000,000	Retained earnings (cash dividends, $328,000)	700,000
Retained earnings (cash dividends, $220,000)	700,000		$4,200,000
	$4,200,000		

For the year, each company has earned the same income before interest and taxes.

	Jana Kingston Co.	Mary Ann Benson Co.
Income before interest and taxes	$1,200,000	$1,200,000
Interest expense	120,000	–0–
	1,080,000	1,200,000
Income taxes (20%)	216,000	240,000
Net income	$ 864,000	$ 960,000

At year-end, the market price of Kingston's stock was $101 per share, and Benson's was $63.50.

Instructions

a. Which company is more profitable in terms of return on total assets?

b. Which company is more profitable in terms of return on common stockholders' equity?

c. Which company has the greater net income per share of stock? Neither company issued or reacquired shares during the year.

d. From the point of view of net income, is it advantageous to the stockholders of Jana Kingston Co. to have the long-term debt outstanding? Why?

e. What is the book value per share for each company?

E14.20 (LO 4) (Trading on the Equity Analysis) Presented below is information from the annual report of Emporia Plastics, Inc.

Operating income	$ 532,150
Bond interest expense	135,000
	397,150
Income taxes	183,432
Net income	$ 213,718
Bonds payable	$1,000,000
Common stock	875,000
Retained earnings	375,000

Instructions

a. Compute the return on common stockholders' equity and the rate of interest paid on bonds. (Assume balances for debt and equity accounts approximate averages for the year.)

b. Is Emporia Plastics, Inc. trading on the equity successfully? Explain.

***E14.21 (LO 5) (Preferred Dividends)** The outstanding capital stock of Cleary Corporation consists of 2,000 shares of $100 par value, 8% preferred, and 5,000 shares of $50 par value common.

Instructions

Assuming that the company has retained earnings of $90,000, all of which is to be paid out in dividends, and that preferred dividends were not paid during the 2 years preceding the current year, state how much each class of stock should receive under each of the following conditions.

a. The preferred stock is noncumulative and nonparticipating.

b. The preferred stock is cumulative and nonparticipating.

c. The preferred stock is cumulative and participating. (Round dividend rate percentages to four decimal places.)

***E14.22 (LO 5) (Preferred Dividends)** Matt Schmidt Company's ledger shows the following balances on December 31, 2025.

7% Preferred stock—$10 par value, outstanding 20,000 shares	$ 200,000
Common stock—$100 par value, outstanding 30,000 shares	3,000,000
Retained earnings	630,000

Instructions

Assuming that the directors decide to declare total dividends in the amount of $366,000, determine how much each class of stock should receive under each of the conditions stated below. One year's dividends are in arrears on the preferred stock.

a. The preferred stock is cumulative and fully participating.

b. The preferred stock is noncumulative and nonparticipating.

c. The preferred stock is noncumulative and is participating in distributions in excess of a 10% dividend rate on the common stock.

***E14.23 (LO 5) (Preferred Stock Dividends)** Cajun Company has outstanding 2,500 shares of $100 par, 6% preferred stock and 15,000 shares of $10 par value common. The following schedule shows the amount of dividends paid out over the last 4 years.

Instructions

Allocate the dividends to each type of stock under assumptions (a) and (b). Express your answers in per share amounts using the format shown below.

		Assumptions			
		(a) Preferred, Noncumulative, and Nonparticipating		(b) Preferred, Cumulative, and Fully Participating	
Year	Paid-Out	Preferred	Common	Preferred	Common
2023	$13,000				
2024	26,000				
2025	57,000				
2026	76,000				

***E14.24 (LO 5) (Computation of Book Value per Share)** Morgan Sondgeroth Inc. began operations in January 2023 and reported the following results for each of its 3 years of operations.

2023	$260,000 net loss
2024	40,000 net loss
2025	800,000 net income

At December 31, 2025, Morgan Sondgeroth Inc. capital accounts were as follows.

8% cumulative preferred stock, par value $100; authorized, issued, and outstanding 5,000 shares	$500,000
Common stock, par value $1.00; authorized 1,000,000 shares; issued and outstanding 750,000 shares	$750,000

Morgan Sondgeroth Inc. has never paid a cash or stock dividend. There has been no change in the capital accounts since Sondgeroth began operations. The state law permits dividends only from retained earnings.

Instructions

a. Compute the book value of the common stock at December 31, 2025.

b. Compute the book value of the common stock at December 31, 2025, assuming that the preferred stock has a liquidating value of $106 per share.

Problems

P14.1 (LO 1, 2, 3, 4) Excel Groupwork (Equity Transactions and Statement Preparation) On January 5, 2025, Phelps Corporation received a charter granting the right to issue 5,000 shares of $100 par value, 8% cumulative and nonparticipating preferred stock, and 50,000 shares of $10 par value common stock. It then completed these transactions.

Jan. 11	Issued 20,000 shares of common stock at $16 per share.
Feb. 1	Issued to Sanchez Corp. 4,000 shares of preferred stock for the following assets: equipment with a fair value of $50,000; a factory building with a fair value of $160,000; and land with an appraised value of $270,000.
July 29	Purchased 1,800 shares of common stock at $17 per share. (Use cost method.)
Aug. 10	Sold the 1,800 treasury shares at $14 per share.
Dec. 31	Declared a $0.25 per share cash dividend on the common stock and declared the preferred dividend.
Dec. 31	Closed the Income Summary account. There was a $175,700 net income.

Instructions

a. Record the journal entries for the transactions listed above.

b. Prepare the stockholders' equity section of Phelps Corporation's balance sheet as of December 31, 2025.

P14.2 (LO 2, 4) (Treasury Stock Transactions and Presentation) Clemson Company had the following stockholders' equity as of January 1, 2025.

Common stock, $5 par value, 20,000 shares issued	$100,000
Paid-in capital in excess of par—common stock	300,000
Retained earnings	320,000
Total stockholders' equity	$720,000

During 2025, the following transactions occurred.

Feb. 1	Clemson repurchased 2,000 shares of treasury stock at a price of $19 per share.
Mar. 1	800 shares of treasury stock repurchased above were reissued at $17 per share.
Mar. 18	500 shares of treasury stock repurchased above were reissued at $14 per share.
Apr. 22	600 shares of treasury stock repurchased above were reissued at $20 per share.
May 1	Remaining treasury shares are retired.

Instructions

a. Prepare the journal entries to record the treasury stock transactions in 2025, assuming Clemson uses the cost method.

b. Prepare the stockholders' equity section as of April 30, 2025. Net income for the first 4 months of 2025 was $130,000.

P14.3 (LO 1, 2, 3, 4) (Equity Transactions and Statement Preparation) Hatch Company has two classes of capital stock outstanding: 8%, $20 par preferred and $5 par common. At December 31, 2025, the following accounts were included in stockholders' equity.

Preferred Stock, 150,000 shares	$ 3,000,000
Common Stock, 2,000,000 shares	10,000,000
Paid-in Capital in Excess of Par—Preferred Stock	200,000
Paid-in Capital in Excess of Par—Common Stock	27,000,000
Retained Earnings	4,500,000

The following transactions affected stockholders' equity during 2026.

Jan. 1	30,000 shares of preferred stock issued at $22 per share.
Feb. 1	50,000 shares of common stock issued at $20 per share.
June 1	2-for-1 stock split (par value reduced to $2.50).
July 1	30,000 shares of common treasury stock purchased at $10 per share. Hatch uses the cost method.
Sept. 15	10,000 shares of treasury stock reissued at $11 per share.
Dec. 31	The preferred dividend is declared, and a common dividend of 50¢ per share is declared.
Dec. 31	Net income is $2,100,000.

Instructions

Prepare the stockholders' equity section for Hatch Company at December 31, 2026. Show all supporting computations.

P14.4 (LO 1) (Stock Transactions—Lump Sum) Seles Corporation's charter authorized issuance of 100,000 shares of $10 par value common stock and 50,000 shares of $50 par value preferred stock. The following transactions involving the issuance of shares of stock were completed. Each transaction is independent of the others.

1. Issued a $10,000, 9% bond payable at par and gave as a bonus one share of preferred stock, which at that time was selling for $106 a share.
2. Issued 500 shares of common stock for equipment. The equipment had been appraised at $7,100; the seller's book value was $6,200. The most recent market price of the common stock is $16 a share.
3. Issued 375 shares of common and 100 shares of preferred for a lump sum amounting to $10,800. The common had been selling at $14 and the preferred at $65.
4. Issued 200 shares of common and 50 shares of preferred for equipment. The common had a fair value of $16 per share; the equipment has a fair value of $6,500.

Instructions

Record the transactions listed above in journal entry form.

P14.5 (LO 2) Excel (Treasury Stock—Cost Method) Before Gordon Corporation engages in the following treasury stock transactions, its general ledger reflects, among others, the following account balances (par value of its stock is $30 per share).

Paid-in Capital in Excess of Par—Common Stock	Common Stock	Retained Earnings
$99,000	$270,000	$80,000

Instructions

Record the treasury stock transactions (given below) under the cost method of handling treasury stock; use the FIFO method for purchase-sale purposes.

a. Bought 380 shares of treasury stock at $40 per share.

b. Bought 300 shares of treasury stock at $45 per share.

c. Sold 350 shares of treasury stock at $42 per share.

d. Sold 110 shares of treasury stock at $38 per share.

P14.6 (LO 2, 3, 4) Groupwork (Treasury Stock—Cost Method—Equity Section Preparation) Washington Company has the following stockholders' equity accounts at December 31, 2025.

Common Stock ($100 par value, authorized 8,000 shares)	$480,000
Retained Earnings	294,000

Instructions

a. Prepare entries in journal form to record the following transactions, which took place during 2026.

1. 280 shares of outstanding stock were purchased at $97 per share. (These are to be accounted for using the cost method.)
2. A $20 per share cash dividend was declared.
3. The dividend declared in (2) above was paid.
4. The treasury shares purchased in (1) above were resold at $102 per share.
5. 500 shares of outstanding stock were purchased at $105 per share.
6. 350 of the shares purchased in (5) above were resold at $96 per share.

b. Prepare the stockholders' equity section of Washington Company's balance sheet after giving effect to these transactions, assuming that the net income for 2026 was $94,000. State law requires restriction of retained earnings for the amount of treasury stock.

P14.7 (LO 3) (Cash Dividend Entries) The books of Conchita Corporation carried the following account balances as of December 31, 2025.

Cash	$ 195,000
Preferred Stock (6% cumulative, nonparticipating, $50 par)	300,000
Common Stock (no-par value, 300,000 shares issued)	1,500,000
Paid-in Capital in Excess of Par—Preferred Stock	150,000
Treasury Stock (common 2,800 shares at cost)	33,600
Retained Earnings	105,000

The company decided not to pay any dividends in 2025.

The board of directors, at their annual meeting on December 21, 2026, declared the following: "The current year dividends shall be 6% on the preferred and $.30 per share on the common. The dividends in arrears shall be paid by issuing 1,500 shares of treasury stock." At the date of declaration, the preferred is selling at $80 per share, and the common at $12 per share. Net income for 2026 is estimated at $77,000.

Instructions

a. Prepare the journal entries required for the dividend declaration and payment, assuming that they occur simultaneously.

b. Could Conchita Corporation give the preferred stockholders 2 years' dividends and common stockholders a 30 cents per share dividend, all in cash?

P14.8 (LO 3) Groupwork (Dividends and Splits) Myers Company provides you with the following condensed balance sheet information.

Assets		Liabilities and Stockholders' Equity		
Current assets	$ 40,000	Current and long-term liabilities		$100,000
Equity investments	60,000	Stockholders' equity		
Equipment (net)	250,000	Common stock ($5 par)	$ 20,000	
Intangibles	60,000	Paid-in capital in excess of par	110,000	
Total assets	$410,000	Retained earnings	180,000	310,000
		Total liabilities and stockholders' equity		$410,000

Instructions

For each of the following transactions, indicate the dollar impact (if any) on the following five items: (1) total assets, (2) common stock, (3) paid-in capital in excess of par, (4) retained earnings, and (5) stockholders' equity. (Each situation is independent.)

a. Myers declares and pays a $0.50 per share cash dividend.

b. Myers declares and issues a 10% stock dividend when the market price of the stock is $14 per share.

c. Myers declares and issues a 30% stock dividend when the market price of the stock is $15 per share.

d. Myers declares and distributes a property dividend. Myers gives one share of its equity investment (ABC stock) for every two shares of Myers Company stock held. Myers owns 10,000 shares of ABC. ABC is selling for $10 per share on the date the property dividend is declared.

e. Myers declares a 2-for-1 stock split and issues new shares.

P14.9 (LO 1, 2, 3, 4) (Stockholders' Equity Section of Balance Sheet) The following is a summary of all relevant transactions of Vicario Corporation since it was organized in 2025.

In 2025, 15,000 shares were authorized and 7,000 shares of common stock ($50 par value) were issued at a price of $57. In 2026, 1,000 shares were issued as a stock dividend when the stock was selling for $60. Three hundred shares of common stock were bought in 2027 at a cost of $64 per share. These 300 shares are still in the company treasury.

In 2026, 10,000 preferred shares were authorized and the company issued 5,000 of them ($100 par value) at $113. Some of the preferred stock was reacquired by the company and later reissued for $4,700 more than it cost the company.

The corporation has earned a total of $610,000 in net income after income taxes and paid out a total of $312,600 in cash dividends since incorporation.

Instructions

Prepare the stockholders' equity section of the balance sheet in proper form for Vicario Corporation as of December 31, 2027. Account for treasury stock using the cost method.

P14.10 (LO 3) Writing (Stock Dividends and Stock Split) Oregon Inc. $10 par common stock is selling for $110 per share. Four million shares are currently issued and outstanding. The board of directors wishes to stimulate interest in Oregon common stock before a forthcoming stock issue but does not wish to distribute capital at this time. The board also believes that too many adjustments to the stockholders' equity section, especially retained earnings, might discourage potential investors.

The board has considered three options for stimulating interest in the stock:

1. A 20% stock dividend.
2. A 100% stock dividend.
3. A 2-for-1 stock split.

Instructions

Acting as financial advisor to the board, you have been asked to report briefly on each option and, considering the board's wishes, make a recommendation. Discuss the effects of each of the foregoing options.

P14.11 (LO 3, 4) (Stock and Cash Dividends) Earnhart Corporation has outstanding 3,000,000 shares of common stock with a par value of $10 each. The balance in its Retained Earnings account at January 1, 2025, was $24,000,000, and it then had Paid-in Capital in Excess of Par—Common Stock of $5,000,000. During 2025, the company's net income was $4,700,000. A cash dividend of $0.60 a share was declared on May 5, 2025, and was paid June 30, 2025, and a 6% stock dividend was declared on November 30, 2025, and distributed to stockholders of record at the close of business on December 31, 2025. You have been asked to advise on the proper accounting treatment of the stock dividend.

The existing stock of the company is quoted on a national stock exchange. The market price of the stock has been as follows.

October 31, 2025	$31
November 30, 2025	34
December 31, 2025	38

Instructions

a. Prepare the journal entry to record the declaration and payment of the cash dividend.

b. Prepare the journal entry to record the declaration and distribution of the stock dividend.

c. Prepare the stockholders' equity section (including schedules of retained earnings and additional paid-in capital) of the balance sheet of Earnhart Corporation for the year 2025 on the basis of the foregoing information. Draft a note to the financial statements setting forth the basis of the accounting for the stock dividend, and add separately appropriate comments or explanations regarding the basis chosen.

P14.12 (LO 1, 2, 3, 4) (Analysis and Classification of Equity Transactions) Penn Company was formed on July 1, 2023. It was authorized to issue 300,000 shares of $10 par value common stock and 100,000 shares of 8%, $25 par value, cumulative and nonparticipating preferred stock. Penn Company has a July 1–June 30 fiscal year.

The following information relates to the stockholders' equity accounts of Penn Company.

Common Stock

Prior to the 2025–2026 fiscal year, Penn Company had 110,000 shares of outstanding common stock issued as follows.

1. 85,000 shares were issued for cash on July 1, 2023, at $31 per share.
2. On July 24, 2023, 5,000 shares were exchanged for a plot of land which cost the seller $70,000 in 2017 and had a fair value (based on recent land sales) of $220,000 on July 24, 2023.
3. 20,000 shares were issued on March 1, 2024, for $42 per share.

During the 2025–2026 fiscal year, the following transactions regarding common stock took place.

November 30, 2025	Penn purchased 2,000 shares of its own stock on the open market at $39 per share. Penn uses the cost method for treasury stock.
December 15, 2025	Penn declared a 5% stock dividend for stockholders of record on January 15, 2026, to be issued on January 31, 2026. Penn was having a liquidity problem and could not afford a cash dividend at the time. Penn's common stock was selling at $52 per share on December 15, 2025.
June 20, 2026	Penn sold 500 shares of its own common stock that it had purchased on November 30, 2025, for $21,000.

Preferred Stock

Penn issued 40,000 shares of preferred stock at $44 per share on July 1, 2024.

Cash Dividends

Penn has followed a schedule of declaring cash dividends in December and June, with payment being made to stockholders of record in the following month. The cash dividends which have been declared since inception of the company through June 30, 2026, are shown below.

Declaration Date	Common Stock	Preferred Stock
12/15/24	$0.30 per share	$1.00 per share
6/15/25	$0.30 per share	$1.00 per share
12/15/25	—	$1.00 per share

No cash dividends were declared during June 2026 due to the company's liquidity problems.

Retained Earnings

As of June 30, 2025, Penn's retained earnings account had a balance of $690,000. For the fiscal year ending June 30, 2026, Penn reported net income of $40,000.

Instructions

Prepare the stockholders' equity section of the balance sheet, including appropriate notes, for Penn Company as of June 30, 2026, as it should appear in its annual report to the shareholders.

(CMA adapted)

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ14.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What is the par or stated value of P&G's preferred stock?

b. What is the par or stated value of P&G's common stock?

c. What percentage of P&G's authorized common stock was issued at June 30, 2020?

d. How many shares of common stock were outstanding at June 30, 2020, and June 30, 2019?

e. What was the dollar amount effect of dividends on P&G's stockholders' equity?

f. What is P&G's return on common stockholders' equity for 2020 and 2019?

g. What is P&G's payout ratio for 2020 and 2019?

h. What was the market price range (high/low) of P&G's common stock during the quarter ended June 30, 2020?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ14.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online. Stock price data can be found in the company's annual 10K, filed at the SEC.

Instructions

Use the companies' financial information to answer the following questions.

a. What is the par or stated value of Coca-Cola's and PepsiCo's common or capital stock?

b. What percentage of authorized shares was issued by Coca-Cola at December 31, 2020, and by PepsiCo at December 31, 2020?

c. How many shares are held as treasury stock by Coca-Cola at December 31, 2020, and by PepsiCo at December 31, 2020?

d. How many Coca-Cola common shares are outstanding at December 31, 2020? How many PepsiCo shares of capital stock are outstanding at December 31, 2020?

e. What amounts of cash dividends per share were declared by Coca-Cola and PepsiCo in 2020? What were the dollar amount effects of the cash dividends on each company's stockholders' equity?

f. What are Coca-Cola's and PepsiCo's return on common/capital stockholders' equity for 2020? Which company gets the higher return on the equity of its shareholders?

g. What are Coca-Cola's and PepsiCo's payout ratios for 2020?

Financial Statement Analysis Case: Kellogg Company

UYJ14.3 **Kellogg Company** is the world's leading producer of ready-to-eat cereal products. In recent years, the company has taken numerous steps aimed at improving its profitability and earnings per share. Presented below are some basic facts for Kellogg for a recent year.

(in millions)	Current Year	Prior Year
Net sales	$14,792	$14,580
Net income	1,807	632
Total assets	15,474	15,153
Total liabilities	11,867	12,302
Common stock, $0.25 par value	105	105
Capital in excess of par value	626	678
Retained earnings	6,749	6,689
Treasury stock, at cost	2,999	3,470
Number of shares outstanding (in millions)	363	358

Instructions

a. What are some of the reasons that management purchases its own stock?

b. Explain how earnings per share might be affected by treasury stock transactions.

c. Calculate the debt to assets ratio for the current year and the prior year, and discuss the implications of the change.

Financial Statement Analysis Case: Wiebold, Inc.

UYJ14.4 The following note related to stockholders' equity was reported in **Wiebold, Inc.**'s annual report.

> On February 1, the Board of Directors declared a 3-for-2 stock split, distributed on February 22 to shareholders of record on February 10. Accordingly, all numbers of common shares, except unissued shares and treasury shares, and all per share data have been restated to reflect this stock split.
>
> On the basis of amounts declared and paid, the annualized quarterly dividends per share were $0.80 in the current year and $0.75 in the prior year.

Instructions

a. What is the significance of the date of record and the date of distribution?

b. Why might Wiebold have declared a 3-for-2 for stock split?

c. What impact does Wiebold's stock split have on (1) total stockholders' equity, (2) total par value, (3) outstanding shares, and (4) book value per share?

Accounting, Analysis, and Principles

UYJ14.5 On January 1, 2025, Agassi Corporation had the following stockholders' equity accounts.

Common Stock ($10 par value, 60,000 shares issued and outstanding)	$600,000
Paid-in Capital in Excess of Par—Common Stock	500,000
Retained Earnings	620,000

During 2025, the following transactions occurred.

Jan. 15	Declared and paid a $1.05 cash dividend per share to stockholders.
Apr. 15	Declared and distributed a 10% stock dividend. The market price of the stock was $14 per share.
May 15	Reacquired 2,000 common shares at a market price of $15 per share.
Nov. 15	Reissued 1,000 shares held in treasury at a price of $18 per share.
Dec. 31	Determined that net income for the year was $370,000.

Accounting

Journalize the above transactions. (Include entries to close net income to Retained Earnings.) Determine the ending balances for Paid-in Capital, Retained Earnings, and Stockholders' Equity.

Analysis

Calculate the payout ratio and the return on common stockholders' equity.

Principles

R. Federer is examining Agassi's financial statements and wonders whether the "gains" or "losses" on Agassi's treasury stock transactions should be included in income for the year. Briefly explain whether, and the conceptual reasons why, gains or losses on treasury stock transactions should be recorded in income.

Developing Your Professional Skills

Critical-Thinking Cases

CT14.1 (LO 1) (Preemptive Rights and Dilution of Ownership) Wallace Computer Company is a small, closely held corporation. Eighty percent of the stock is held by Derek Wallace, president. Of the remainder, 10% is held by members of his family and 10% by Kathy Baker, a former officer who is now retired. The balance sheet of the company at June 30, 2025, was substantially as shown below.

Assets		Liabilities and Stockholders' Equity	
Cash	$ 22,000	Current liabilities	$ 50,000
Other	450,000	Common stock	250,000
	$472,000	Retained earnings	172,000
			$472,000

Additional authorized common stock of $300,000 par value had never been issued. To strengthen the cash position of the company, Wallace issued common stock with a par value of $100,000 to himself at par for cash. At the next stockholders' meeting, Baker objected and claimed that her interests had been injured.

Instructions

a. Which stockholder's right was ignored in the issue of shares to Derek Wallace?

b. How may the damage to Baker's interests be repaired most simply?

c. If Derek Wallace offered Baker a personal cash settlement and they agreed to employ you as an impartial arbitrator to determine the amount, what settlement would you propose? Present your calculations with sufficient explanation to satisfy both parties.

CT14.2 (LO 1) (Issuance of Stock for Land) Martin Corporation is planning to issue 3,000 shares of its own $10 par value common stock for two acres of land to be used as a building site.

Instructions

a. What general rule should be applied to determine the amount at which the land should be recorded?

b. Under what circumstances should this transaction be recorded at the fair value of the land?

c. Under what circumstances should this transaction be recorded at the fair value of the stock issued?

d. Assume Martin intentionally records this transaction at an amount greater than the fair value of the land and the stock. Discuss this situation.

CT14.3 (LO 1, 2, 3) Writing (Conceptual Issues—Equity) Statements of Financial Accounting Concepts set forth financial accounting and reporting objectives and fundamentals that will be used by the Financial Accounting Standards Board in developing standards. *Concepts Statement No. 6* defines various elements of financial statements.

Instructions

Answer the following questions based on *SFAC No. 6.*

a. Define and discuss the term "equity."

b. What transactions or events change owners' equity?

c. Define "investments by owners" and provide examples of this type of transaction. What financial statement element other than equity is typically affected by owner investments?

d. Define "distributions to owners" and provide examples of this type of transaction. What financial statement element other than equity is typically affected by distributions?

e. What are examples of changes within owners' equity that do not change the total amount of owners' equity?

CT14.4 (LO 3) (Stock Dividends and Splits) The directors of Merchant Corporation are considering the issuance of a stock dividend. They have asked you to discuss the proposed action by answering the following questions.

Instructions

a. What is a stock dividend? How is a stock dividend distinguished from a stock split (1) from a legal standpoint, and (2) from an accounting standpoint?

b. For what reasons does a corporation usually declare a stock dividend? A stock split?

c. Discuss the amount, if any, of retained earnings to be capitalized in connection with a stock dividend.

(AICPA adapted)

CT14.5 (LO 3) (Stock Dividends) Kulikowski Inc., a client, is considering the authorization of a 10% common stock dividend to common stockholders. The financial vice president of Kulikowski wishes to discuss the accounting implications of such an authorization with you before the next meeting of the board of directors.

Instructions

a. The first topic the vice president wishes to discuss is the nature of the stock dividend to the recipient. Discuss the case against considering the stock dividend as income to the recipient.

b. The other topic for discussion is the propriety of issuing the stock dividend to all "stockholders of record" or to "stockholders of record exclusive of shares held in the name of the corporation as treasury stock." Discuss the case against issuing stock dividends on treasury shares.

(AICPA adapted)

CT14.6 (LO 2, 3) (Stock Dividend, Cash Dividend, and Treasury Stock) Mask Company has 30,000 shares of $10 par value common stock authorized and 20,000 shares issued and outstanding. On August 15, 2025, Mask purchased 1,000 shares of treasury stock for $18 per share. Mask uses the cost method to account for treasury stock. On September 14, 2025, Mask sold 500 shares of the treasury stock for $20 per share.

In October 2025, Mask declared and distributed 1,950 shares as a stock dividend from unissued shares when the market price of the common stock was $21 per share.

On December 20, 2025, Mask declared a $1 per share cash dividend, payable on January 10, 2026, to shareholders of record on December 31, 2025.

Instructions

a. How should Mask account for the purchase and sale of the treasury stock, and how should the treasury stock be presented in the balance sheet at December 31, 2025?

b. How should Mask account for the stock dividend, and how would it affect the stockholders' equity at December 31, 2025? Why?

c. How should Mask account for the cash dividend, and how would it affect the balance sheet at December 31, 2025? Why?

(AICPA adapted)

CT14.7 (LO 2) Ethics (Treasury Stock—Ethics) Lois Kenseth, president of Sycamore Corporation, is concerned about several large stockholders who have been very vocal lately in their criticisms of her leadership. She thinks they might mount a campaign to have her removed as the corporation's CEO. She decides that buying them out by purchasing their shares could eliminate them as opponents, and she is confident they would accept a "good" offer. Kenseth knows the corporation's cash position is decent, so it has the cash to complete the transaction. She also knows the purchase of these shares will increase earnings per share, which should make other investors quite happy. (Earnings per share is calculated by dividing net income available for the common shareholders by the weighted-average number of shares outstanding. Therefore, if the number of shares outstanding is decreased by purchasing treasury shares, earnings per share increases.)

Instructions

Answer the following questions.

a. Who are the stakeholders in this situation?

b. What are the ethical issues involved?

c. Should Kenseth authorize the transaction?

FASB Codification References

[1] FASB ASC 505-10-50-3. [Predecessor literature: "Disclosure of Information about Capital Structure," *Statement of Financial Accounting Standards No. 129* (Norwalk, Conn.: FASB, 1997).]

[2] FASB ASC 480-10-05. [Predecessor literature: "Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity," *Statement of Financial Accounting Standards No. 150* (Norwalk Conn.: FASB, 2003).]

[3] FASB ASC 505-20-05-2. [Predecessor literature: American Institute of Certified Public Accountants, *Accounting Research and Terminology Bulletins, No. 43* (New York: AICPA, 1961), Ch. 7, par. 10.]

[4] FASB ASC 505-20-25-3. [Predecessor literature: American Institute of Certified Public Accountants, *Accounting Research and Terminology Bulletins, No. 43* (New York: AICPA, 1961), par. 13.]

[5] FASB ASC 505-10-50-3. [Predecessor literature: "Disclosure of Information about Capital Structure," *Statement of Financial Accounting Standards No. 129* (Norwalk, Conn.: FASB, February 1997), par. 4.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following.

Provide Codification references for your responses.

CE14.1 Access the glossary ("Master Glossary") to answer the following.

a. What is a "convertible security"?

b. What is a "stock dividend"?

c. What is a "stock split"?

d. What are "participation rights"?

CE14.2 At what percentage point can the issuance of additional shares still qualify as a stock dividend, as opposed to a stock split?

CE14.3 A company plans to issue shares and wants to know the SEC's stance on the accounting treatment for the costs of issuing stock. Can these costs be deferred, or must they be expensed immediately?

CE14.4 If a company chooses to purchase its own shares and then either (1) retires the repurchased shares and issues additional shares, or (2) resells the repurchased shares, can a gain or loss be recognized by the company? Why or why not?

Codification Research Case

Recall from Chapter 12 that Hincapie Co. (a specialty bike-accessory manufacturer) is expecting growth in sales of some products targeted to the low-price market. Hincapie is contemplating a preferred stock issue to help finance this expansion in operations. The company is leaning toward participating preferred stock because ownership will not be diluted, but the investors will get an extra dividend if the company does well. The company management wants to be certain that its reporting of this transaction is transparent to its current shareholders and wants you to research the disclosure requirements related to its capital structure.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the authoritative literature that addresses disclosure of information about capital structure.

b. Find definitions of the following:

1. Securities.
2. Participation rights.
3. Preferred stock.

c. What information about securities must companies disclose? Discuss how Hincapie should report the proposed preferred stock issue.

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

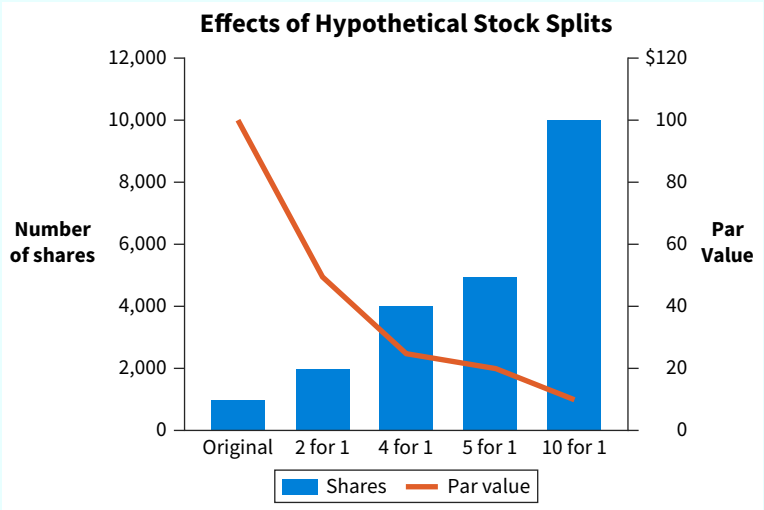
Analytics in Action Activities

Using Data Visualizations to Understand Accounting Concepts

DA14.1 We have all been there—you have read and reread the chapter a few times, but something just is not clicking. Maybe a visualization would help? There are many useful applications for data analytics and visualizations, including helping us understand intermediate accounting topics.

Excel

For example, say you are having a hard time understanding the impact of stock splits—because there is no journal entry, what is actually happening? Here, with even a small amount of data, we can use Excel to visualize the impact of stock splits on the number of shares and par value, as the following shows, to help us see what is really going on!



Required

For this exercise, you will use formulas and charts in Excel to create a visualization showing the impact to the shares outstanding and par value under different stock-split scenarios. You will then analyze the chart and discuss the relationship between number of shares, par value, and total common stock outstanding for the various scenarios.

Go to Wiley Course Resources for complete details and instructions.

DA14.2 Beyond using data visualizations to help us understand accounting concepts, we can use these tools to understand external financial data. Investors have access to a significant amount of data related to public companies, including information on dividends. Do firms with higher institutional investors pay more in dividends? This may be hard to answer by looking at a large table with a lot of data, but a visualization may help!

Excel

Required

For this exercise, you are given financial data on the dividends, market capitalization, and institutional holdings of firms in almost 100 different industries. You are asked to first format the data and create a chart that compares total dividends to institutional holdings across the various industries. Using your chart and some additional statistical analysis using formulas in Excel, you will summarize your insights on the data as to whether there appears to be a relationship between institutional holdings and total dividends.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 6

Compare the accounting procedures for stockholders' equity under GAAP and IFRS.

The primary IFRS related to stockholders' equity are *IAS 1* ("Presentation of Financial Statements"), *IAS 32* ("Financial Instruments: Presentation"), and *IAS 39* ("Financial Instruments: Recognition and Measurement"). Following are the key similarities and differences between GAAP and IFRS related to stockholders' equity.

Similarities

- The accounting for the issuance of shares and purchase of treasury stock are similar under both IFRS and GAAP.
- The accounting for declaration and payment of dividends and the accounting for stock splits are similar under both IFRS and GAAP.

Differences

- Major differences relate to terminology used, introduction of concepts such as revaluation surplus, and presentation of stockholders' equity information.
- Many countries have different investor groups than the United States. For example, in Germany, financial institutions like banks are not only the major creditors but often are the largest shareholders as well. In the United States and the United Kingdom, many companies rely on substantial investment from private investors.
- The accounting for treasury share retirements differs between IFRS and GAAP. Under GAAP, a company has three options: (1) charge the excess of the cost of treasury shares over par value to retained earnings, (2) allocate the difference between paid-in capital and retained earnings, or (3) charge the entire amount to paid-in capital. Under IFRS, the excess may have to be charged to paid-in capital, depending on the original transaction related to the issuance of the shares.
- The statement of changes in equity is usually referred to as the statement of stockholders' equity (or shareholders' equity) under GAAP.
- Both IFRS and GAAP use the term retained earnings. However, IFRS relies on the term "reserve" as a dumping ground for other types of equity transactions, such as other comprehensive income items as well as various types of unusual transactions related to convertible debt and share option contracts. GAAP relies on the account Accumulated Other Comprehensive Income (Loss). We also use this account in the discussion below, as it appears this account is gaining prominence within the IFRS literature.
- Under IFRS, it is common to report "revaluation surplus" related to increases or decreases in items such as property, plant, and equipment; mineral resources; and intangible assets. The term surplus is generally not used in GAAP. In addition, unrealized gains on the above items are not reported in the financial statements under GAAP.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 15

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Dilutive Securities and Earnings per Share

WHAT are dilutive securities?

Dilutive securities provide investors with an **option** to become a common shareholder. When investors use their option to become common shareholders, the company issues more common shares, which results in **dilution** of the ownership stakes of existing shareholders. Some examples of dilutive securities include convertible bonds, convertible preferred stock, stock options, restricted-stock, and warrants.

Tesla, Inc.
Statement of Cash Flows
(in millions) (partial)

Cash Flows from Financing Activities	**Year Ended 12/31/20**
Proceeds from issuances of common stock in public offerings, net of issuance costs	$ 12,269
Proceeds from issuances of convertible and other debt	9,713
Repayments of convertible and other debt	(11,623)
Proceeds from exercises of stock options and other stock issuances	417
Purchase of convertible note hedges [$(476) in 2019]	—
Proceeds from issuance of warrants ($174 in 2019)	—

WHY is understanding the accounting for dilutive securities important?

Just about all companies issue both debt and equity as part of their capital structure. Companies must determine the proper financial instruments to issue to achieve an optimal balance of liquidity, solvency, and financial flexibility. For example, should a company issue regular or convertible debt, regular or convertible preferred stock, or common stock? Should a company compensate employees using cash, stock options, or other types of compensation? Presented to the left is an example of **Tesla**'s cash flows from financing activities, which shows the types of financial instruments it uses in its capital structure.

In addition, Tesla explains the effect that its dilutive securities have on its earning per share computations in the following schedule.

	Year Ended 12/21/20
Weighted average shares used in computing net income (loss) per share of common stock, basic	933
Add: Stock-based awards	66
Convertible senior notes	47
Warrants	37
Weighted average shares used in computing net income (loss) per share of common stock, diluted	1,083

As indicated, the weighted-average shares outstanding would **increase** by 150 million shares if the stock-based awards, convertible senior notes, and warrants were converted into shares of common stock.

HOW do we account for dilutive securities and their effect on earnings per share?

Debate continues about the accounting for dilutive securities. The profession has decided that convertible debt should generally be reported as debt and not equity. Stock warrants sold with debt may or may not be reported as debt or equity, depending on the characteristics of the stock warrant. As you learned in Chapter 14, the classification of preferred stock is often determined by whether the preferred stock is redeemable by either the holder or the issuer. In addition, principles have been established as to how to account for stock options and restricted-stock plans used to compensate employees. The profession also has developed guidelines as to how to report these securities in the computation of earnings per share.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 15.1 Describe the accounting for the issuance, conversion, and retirement of convertible securities.	**15.1 Dilutive Securities** • Convertible debt • Convertible preferred stock	Examples **15.1** Convertible Bond Issue **15.2** Conversion of Convertible Bond **15.3** Induced Conversion **15.4** Conversion of Convertible Preferred Stock
LO 15.2 Contrast the accounting for stock warrants with stock rights.	**15.2 Stock Warrants** • Warrants and other securities • Stock rights	Examples **15.5** Detachable Warrants **15.6** Proportional Method **15.7** Incremental Method Put It into Practice LOs 15.1 and 15.2 Account for Dilutives
LO 15.3 Describe the accounting and reporting for stock compensation plans.	**15.3 Stock Compensation Plans** • Stock options • Restricted-stock plans • Employee stock-purchase plans • Trends • Disclosure of compensation plans	Examples **15.8** Stock Compensation **15.9** Restricted-Stock Award **15.10** Restricted-Stock Forfeiture **15.11** Restricted-Stock Units **15.12** Restricted-Stock Units—No Vesting **15.13** Stock-Purchase Plan Put It into Practice LO 15.3 Implement Stock Compensation
LO 15.4 Compute basic earnings per share.	**15.4 Basic Earnings per Share** • Simple structure	Examples **15.14** Weighted-Average Shares Outstanding **15.15** Stock Dividend **15.16** Stock Repurchases **15.17** Stock Split Put It into Practice LO 15.4 Compute Basic EPS
LO 15.5 Compute diluted earnings per share.	**15.5 Diluted Earnings per Share** • Convertible securities • Options and warrants • Contingent issues • Antidilution • Presentation and disclosure • Summary	Examples **15.18** Diluted EPS Numerator **15.19** Diluted EPS Denominator **15.20** Diluted EPS Conversion Rate **15.21** Convertible Preferred Stock **15.22** Incremental Shares **15.23** Treasury-Stock Method **15.24** Contingent Issue **15.25** Antidilution Put It into Practice LO 15.5 Compute Diluted EPS

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

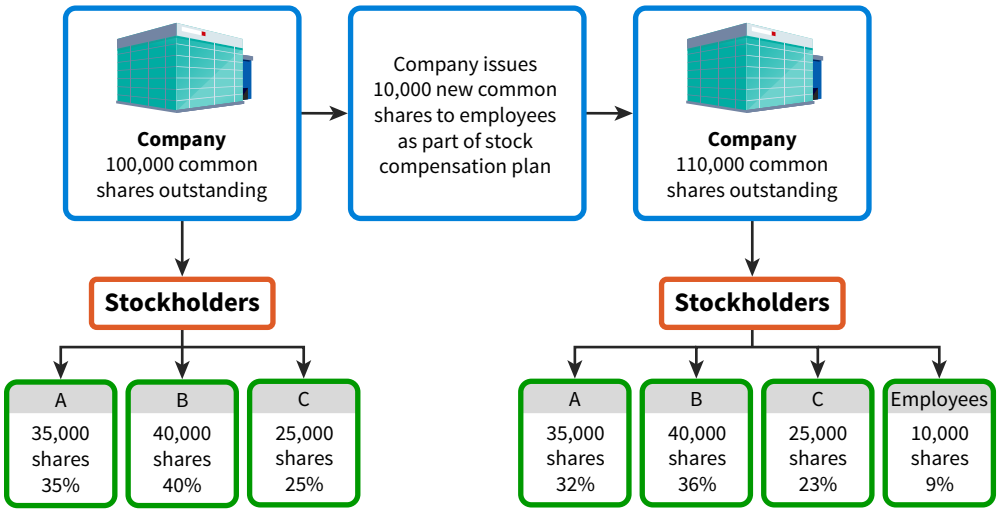
15.1 Dilutive Securities

LEARNING OBJECTIVE 1

Describe the accounting for the issuance, conversion, and retirement of convertible securities.

You've probably heard the term "dilution" in the context of chemistry and mixing liquids. Any liquid can be "diluted" by adding water to it to make it thinner or weaker. What does dilution mean in an accounting and finance context? It refers to the situation when more common shares are issued, the ownership stake of existing shareholders is "diluted," or decreased. Illustration 15.1 provides an example.

ILLUSTRATION 15.1 Dilution of Ownership



As Illustration 15.1 shows, the company had 100,000 shares of common stock outstanding with three shareholders before issuance of the new shares. You can see that Stockholder B had the largest ownership stake with 40%. After issuing the additional 10,000 shares to its employees, 110,000 shares are outstanding. What happened to Stockholder B's ownership stake? It decreased to 36% (40,000 shares ÷ 110,000 shares). With the issuance of additional shares, more shares are outstanding, and the ownership stakes of Stockholders A, B, and C are therefore diluted (reduced). As we will see later in the chapter, increasing the number of shares outstanding will also decrease, or dilute, an important accounting metric—earnings per share.

Dilutive securities are any financial instruments that have the potential to **increase** the number of common shares outstanding. There are a variety of dilutive securities that companies can issue. In this chapter, we cover convertible bonds, convertible preferred stock, stock options and other employee compensation plans, and warrants.

There has been significant controversy over the accounting for some dilutive securities. The biggest debate is whether some dilutive securities should be reported as debt or equity, or both. Remember, for an item to be classified as a liability, it must have a key characteristic—the **obligation** to pay the holder of the security in the future. As we discuss these dilutive securities, think about the characteristics of each one and how it may resemble debt, equity, or both.[1]

[1]The FASB has a project on distinguishing liabilities from equity (including convertible debt) with the objective of improving understandability and reducing complexity (without loss of information for users). Go to the FASB website (click on Projects and then Technical Agenda) for more details.

Convertible Debt

Convertible debt are bonds (or notes) that have the added feature of being able to convert into common stock during some specified period (generally five years). Why have companies like **Airbnb**, **Ford Motor Company**, and **Twitter** recently issued convertible bonds as this method of financing?

- **To lower interest costs.** Generally, convertible debt offers a lower interest rate to investors because investors place a value on the conversion feature. For example, Ford's recent convertible debt has a zero-interest rate attached to its convertibles. If Ford decided to issue straight debt with no conversion feature, its interest cost would be much higher. Ford does not have to pay any interest because investors are betting that Ford will continue to sell cars profitably and make great inroads into the electric vehicle market.
- **To manage capital structure.** Issuers often have a call feature attached to the convertible debt (as you learned in Chapter 13). This feature enables the issuer to have some control over its capital structure if its debt to equity becomes too high. A good example of managing its capital structure is **Tesla**, which issued convertibles in 2013, 2014, 2017, and 2019. It funded part of its growth using these securities by calling these bonds at certain points, thereby reducing its debt to equity ratio. This process enabled Tesla to receive funds at a low interest rate as it invested in its electric car business. Many fast-growing, high-tech companies use convertibles to fund their expansion.

Why would an investor be interested in convertible debt?

- **Equity gain.** In a rising stock market, convertible investors may participate in the capital appreciation. For example, if you had purchased Tesla 2014 convertibles, held them to maturity, and converted them to Tesla common stock, you earned a return in excess of 800% and may no longer have to worry about how to pay for college!
- **Principal and interest protection.** Convertibles provide protection when the stock market is declining because the convertible can provide interest income and principal recovery. As one financial expert noted, it is a way to get equity exposure with principal protection. For example, if you were an investor in Ford's convertible bond, you may not receive any interest, but it is likely you will recover your principal even if Ford experiences sales problems related to its electric car expansion.[2]

At Time of Issuance

The **value** of a convertible bond is comprised of two components:

Value of Debt Component + Value of Equity Component = Value of Convertible Bond

Yet, the convertible bond is recorded by the issuing company as a straight debt issue, just like you learned in Chapter 13. That is, none of the proceeds received on a convertible bond issuance are recorded as equity (see **Global View**). Any discount or premium on the convertible bond is recorded and amortized to its maturity date.

Global View

IFRS requires that the issuer of convertible debt record the liability and equity components separately. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

[2] As with any investment, a buyer has to be careful. For example, **Wherehouse Entertainment Inc.**, which had 6¼% convertibles outstanding, was taken private in a leveraged buyout. As a result, the convertible was suddenly as risky as a junk bond of a highly leveraged company with a coupon of only 6¼%. As one holder of the convertibles noted, "What's even worse is that the company will be so loaded down with debt that it probably won't have enough cash flow to make its interest payments. And the convertible debt we hold is subordinated to the rest of Wherehouse's debt." These types of situations make convertibles less attractive and lead to the introduction of takeover protection covenants in some convertible bond offerings. Or, sometimes convertibles are permitted to be called at par, and therefore the conversion premium may be lost.

Example 15.1
Convertible Bond Issue

FACTS Lindor Company issues 50 convertible bonds with a 5-year life with a face value of $1,000 each to Hernandez Inc. The bonds sold at 102. Each bond is convertible into 40 shares of Lindor's $1 par value common stock. The fair value of Lindor's equity component at date of issuance is $200 for each bond.

QUESTION What entry would Lindor make to record the issuance of the convertible debt?

SOLUTION

To record the issuance of the convertible debt:

Cash ($1,000 × 1.02 × 50)	51,000	
Bonds Payable ($1,000 × 50)		50,000
Premium on Bonds Payable (.02 × $50,000)		1,000

Lindor ignores any value related to the equity feature at the date of issuance. Therefore, Lindor does not record the fair value of its equity component. Because Lindor records the convertible bond as a straight debt issue, the premium on the convertible debt will be amortized and reduces interest expense over the 5-year period.

Why is the equity portion of the convertible debt ignored for accounting purposes? The reasoning is that the convertible bondholder cannot sell the conversion right while retaining the debtholder rights. The two choices are mutually exclusive as the convertible security will either be converted into common stock or sold for cash. In other words, the convertible bondholder cannot exercise the option to convert unless the holder foregoes the right to redemption or vice versa.

At Time of Conversion

Continuing with Example 15.1, if Hernandez converts its convertible bonds into common stock, Lindor should use the book value method to record the conversion. The book value method records the common stock issued for the bonds at the carrying amount (book value) of the bonds.

Example 15.2
Conversion of Convertible Bond

FACTS Refer to the information in Example 15.1. Hernandez decides to convert its 50 convertible bonds into common stock at the end of the second year. At that time, the remaining premium on the convertible bonds is $580. In addition, at the time of conversion, the fair value of Lindor's common stock is now $1,300 per share.

QUESTION How should Lindor record the conversion?

SOLUTION

To record conversion into common stock:

Bonds Payable	50,000	
Premium on Bonds Payable	580	
Common Stock (50 × 40 × $1)		2,000
Paid-in Capital in Excess of Par—Common Stock		48,580

In Example 15.2, notice that Paid-in Capital in Excess of Par—Common Stock is credited for the difference between the carrying value of the bond and the par value of the stock issued. Lindor recognizes **no gain or loss upon conversion,** and the fair value per share of common stock at the time of conversion is irrelevant to the journal entry. Support for the book value approach is based on the argument that an agreement was established at the date of the issuance either to pay a stated amount of cash at maturity **or** to issue a stated number of shares of equity securities. Therefore, when Hernandez converts the debt to equity in accordance with the preexisting contract terms, it is simply an exchange of one security, bonds, for another, common stock.

Induced Conversions

Sometimes the issuer wishes to encourage prompt conversion of its convertible debt to equity securities to reduce interest costs or to improve its debt-to-equity ratio. The issuer may offer some form of additional consideration (such as cash or common stock), called a "sweetener," to **induce conversion**. This sweetener is recorded as an expense.

Example 15.3
Induced Conversion

FACTS Graze, Inc. has outstanding $1,000,000 face value convertible bonds convertible into 100,000 shares of $1 par value common stock. Graze wishes to reduce its annual interest cost. To do so, Graze agrees to pay the holders of its convertible bonds an additional $80,000 if they will convert.

QUESTION Assuming conversion occurs, how should Graze record this transaction?

SOLUTION

To record induced conversion:

Debt Conversion Expense	80,000	
Bonds Payable	1,000,000	
Common Stock (100,000 × $1)		100,000
Paid-in Capital in Excess of Par—Common Stock		900,000
Cash		80,000

Graze records the additional $80,000 as **an expense of the current period** and not as a reduction of equity. The expense is reported in the "Other gains and losses" section of the income statement.

Some argue that the cost of a conversion inducement is a cost of obtaining equity capital. As a result, they contend companies should recognize the cost of conversion as a cost of (a reduction of) the equity capital acquired and not as an expense. However, the FASB indicated that when an issuer makes an additional payment to encourage conversion, the payment is for a service (bondholders converting at a given time) and should be reported as an expense.

Extinguishment of Convertible Debt

As indicated earlier, the method for recording the **issuance** of convertible bonds follows that used in recording straight debt issues. The same holds true for **extinguishment** of convertible debt. If the debt is extinguished, or paid off, before its maturity date, the company records a gain or loss for the difference between the reacquisition price of the debt and its carrying value. The gain or loss is reported in the income statement as an Other gain or loss.

Convertible Preferred Stock

As discussed in Chapter 14, **convertible preferred stock** includes an option for the holder to convert preferred shares into a fixed number of common shares. Recording the issuance of convertible preferred stock is the same as recording the issue of non-convertible preferred stock.

- Convertible preferred stock is part of stockholders' equity, not liabilities (unless mandatory redemption exists).
- Remember, convertible bonds are liabilities, so be careful and do not confuse convertible preferred stock with convertible bonds.

When convertible preferred stock is converted to common stock, a company uses the **book value method**. It debits Preferred Stock, along with any related Paid-in Capital in Excess of Par—Preferred Stock, and it credits Common Stock and Paid-in Capital in Excess of Par—Common Stock (if an excess exists). Just like with the convertible bonds, no gain or loss is recognized for the conversion transaction. Also, the current market value of both the convertible preferred stock and the common stock is irrelevant for purposes of recording the transaction.

Example 15.4 Conversion of Convertible Preferred Stock

FACTS Middleton Enterprises issued 1,000 shares of common stock (par value $2) upon conversion of 1,000 shares of preferred stock (par value $1) that was originally issued at $4 per share. The current market value of the common stock is $5 per share.

QUESTION How would Middleton record this transaction?

SOLUTION

To record conversion of convertible preferred stock:

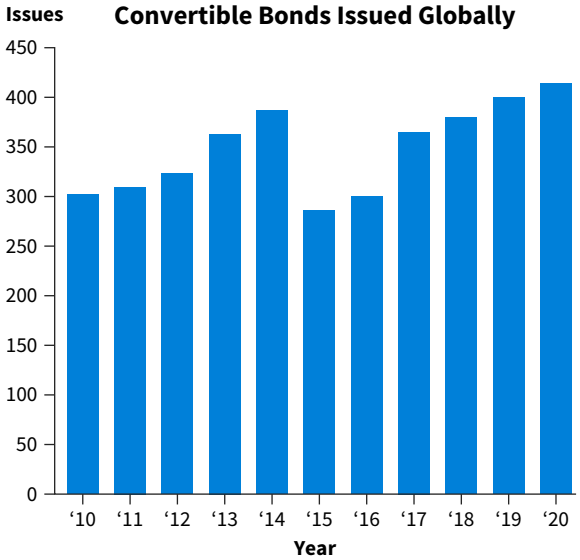
Convertible Preferred Stock (1,000 × $1)	1,000	
Paid-in Capital in Excess of Par—Preferred Stock (1,000 × $3)	3,000	
Common Stock (1,000 × $2)		2,000
Paid-in Capital in Excess of Par—Common Stock		2,000

The conversion entry differs when the par value of the common stock issued **exceeds** the book value of the preferred stock. In that situation, the company debits Retained Earnings for the difference. The rationale for the debit to Retained Earnings is that the company (the issuer) has offered the preferred stockholders an **additional return** to facilitate their conversion to common stock. Many states, however, require that this charge simply reduce additional paid-in capital from other sources.

Accounting Matters

How Low Can You Go?

What do **Tesla**, **Twitter**, **Etsy**, **Airbnb**, and **Expedia Group** all have in common? They are part of the wave of U.S. companies that have recently raised capital in the convertible bond market. And quite a wave it is. As indicated in the following chart, global convertible bond issues are on an upward trend. In the United States, companies issued $54.3 billion worth of convertible bonds through May 2021. This is on top of a record-setting 2020, with U.S. companies issuing $111.2 billion worth of convertible bonds.



Source: Refinitiv.

One-third of the convertible bonds issued in the first half of 2021 were issued at 0% interest, with an overall average interest rate on the bonds of 1.41%. The issuers of these bonds only need to convert the bonds into stock if their share price rises, on average, 39%, typically within a five-year period. Expedia Group issued $1 billion in 0% convertible debt—and its stock price must rise a whopping 72.5% for investors to convert their bonds into shares of stock. With a rebounding travel industry, this could be a win-win for issuers and investors alike as investors are willing to accept such a low interest rate for the prospect of cashing in on rising stock prices.

How likely is it that investors will see a return on convertible bonds? There are a lot of factors that impact whether a convertible will be "in the money." And investors in Tesla's convertible bonds know that all too well. Investors in Tesla's 1.25% 7-year convertible bonds issued in 2014 saw the stock appreciate 1,346% by 2021, thrusting the convertibles well above the conversion threshold. Tesla has issued 11.1 million shares to holders of the bonds with another $419 million of bonds eligible for conversion into more than $3.9 billion worth of stock!

Investors in Tesla's .25%, 5-year convertible bonds, also issued in 2014, were not so lucky. Those bonds matured when Tesla's stock was well below the conversion price, allowing Tesla to raise inexpensive capital with no dilution to its equity!

Sources: M. Farrell, "Convertible-Bond Sales Are Soaring in 2021—Often at 0% Interest," *Wall Street Journal* (May 8, 2021); E. Benmelech, "The End of Tesla's Convertible Era?" *Forbes* (March 1, 2021); and C. Ostroff and P. Davies, "Investors Binge on Convertible Bonds as Issuance Soars," *Wall Street Journal* (November 2, 2020).

15.2 Stock Warrants

LEARNING OBJECTIVE 2

Contrast the accounting for stock warrants with stock rights.

A stock **warrant** is a security that gives investors the **option** to purchase a company's stock at a specific price over a specific period. Warrants are typically included as a "sweetener" to investors to purchase a company's bond issuance. What are the advantages of including warrants with a bond issue?

- Investors like stock warrants because they provide an opportunity to share in the future growth of the company or to sell the warrants in the market.
- Companies use stock warrants to reduce the cost of financing (pay a lower interest rate) and to encourage investors to purchase their stock at some time over the life of the stock warrants.

The option in a stock warrant is like the conversion privilege in a convertible bond. Warrants, if exercised, become common stock and usually have a dilutive effect like the conversion of convertible securities. However, a difference between a convertible security and warrants is that upon exercise of the warrants, there is an exchange of cash. The holder of a warrant usually must pay a certain amount of money to obtain the shares. With convertible securities, the holder merely exchanges the convertible security for common shares.

Stock Warrants Issued with Other Securities

When stock warrants are issued with bonds, the stock warrants may be detachable or nondetachable.

- **Detachable**. Warrants may be sold separately from the bonds.
- **Nondetachable**. Warrants can only be sold with the bond.

Bonds sold with nondetachable warrants are often referred to as "synthetic convertibles" because they have similar attributes as a convertible bond, as follows.

Debt + Nondetachable Stock Warrants = Synthetic Convertible Debt

Nondetachable warrants **do not require an allocation of the proceeds between the bonds and the warrants**. Like the accounting for convertible bonds, companies record the entire proceeds from nondetachable warrants as bonds payable.

What about a detachable warrant?

Example 15.5
Detachable Warrants

FACTS Chen Company issues 10 bonds with a total par value of $10,000 and detachable stock warrants, which provide the right to buy 500 shares of Chen common stock over the next 5 years at $20 per share (the $20 is often referred to as the strike price).

QUESTION What are the alternatives that you, the investor, have related to these detachable stock warrants?

SOLUTION

Given that the stock warrants are **detachable**, you can sell the stock warrants to another investor and continue to hold the bonds, or you can sell the bonds but not the stock warrants. If you keep the stock warrants, you can exercise the stock warrants and receive shares in the company. Recall that if the stock warrants are **nondetachable**, the stock warrants cannot be sold separately. Therefore, both the bond and stock warrants must be sold together.

A company should allocate the proceeds from the sale of debt with detachable stock warrants **between the two securities**. [1] (See the FASB Codification References near the end of the chapter.) The profession takes the position that two separable instruments are involved: (1) a bond and (2) a warrant giving the holder the right to purchase common stock at a certain price. Investors and companies can trade detachable warrants separately from the debt. This allows companies to more efficiently determine the fair value of the equity and debt components.

Two methods are available to determine how much of the proceeds from the sale should be allocated to each security:

1. The proportional method.
2. The incremental method.

Proportional Method

At one time, **AT&T** issued bonds with detachable five-year warrants to buy one share of common stock (par value $5) at $25. At the time, a share of AT&T stock was selling for approximately $50. These warrants enabled AT&T to price its bond offering at par with an interest rate quite a bit lower than prevailing rates at that time. To account for the proceeds from this offering, AT&T would place a value on the two securities:

1. The value of the bonds without the warrants.
2. The value of the warrants.

The **proportional method** then allocates the proceeds using the proportion of the two amounts, based on fair values.

Example 15.6 Proportional Method—Detachable Warrants

FACTS Durant Company issues 10,000 bonds (par $1,000). Each bond has a detachable warrant allowing the holder to purchase one share of $5 par common stock at $25 per share. The total issue price was $10,000,000. Soon after the issue, the bonds sold for 99 without the warrants. The market price of the warrants at that time was $30.

QUESTION How would Durant allocate the proceeds between the bonds and warrants?

SOLUTION

The allocation between the bonds and warrants is as follows.

Fair value of bonds (without warrants) ($10,000,000 × .99)		$ 9,900,000
Fair value of warrants (10,000 × $30)		300,000
Aggregate fair value		$10,200,000
Allocated to bonds:	$\frac{\$9,900,000}{\$10,200,000} \times \$10,000,000 =$	$ 9,705,882
Allocated to warrants:	$\frac{\$300,000}{\$10,200,000} \times \$10,000,000 =$	294,118
Total allocation		$10,000,000

In this situation, the bonds sell at a discount (less than par value). Durant records the sale as follows.

Cash	9,705,882	
Discount on Bonds Payable	294,118	
Bonds Payable		10,000,000

In addition, Durant sells warrants and credits the proceeds to paid-in capital. It makes the following entry.

Cash	294,118	
Paid-in Capital—Stock Warrants		294,118

The allocation of the issue price relies either on an estimate of fair value of each security, generally as established by an investment banker, or on the relative fair value of the bonds and the warrants soon after the company issues and trades them.

In Example 15.6, Durant could have recorded the sale of the bonds and warrants as one combined entry. We show them separately to emphasize that the purchaser of the bond is buying not only a bond but also a possible future claim on common stock in the form of the stock warrant.

Continuing with the Durant example, suppose a few months later that the market price of Durant's common stock is $35 per share. Would it be favorable for the investors to exercise their warrants and purchase common stock for $25 per share? Absolutely! They can purchase the stock at $25 per share when other investors have to pay market price of $35. Assume the investors exercise all 10,000 warrants. Durant receives cash, issues common stock, and makes the following entry.

Cash (10,000 × $25)	250,000	
Paid-in Capital—Stock Warrants	294,118	
Common Stock (10,000 × $5)		50,000
Paid-in Capital in Excess of Par—Common Stock		494,118

Notice that Paid-in Capital—Stock Warrants is debited since all warrants are exercised. If only half of the warrants are exercised, then Paid-in Capital—Stock Warrants is debited for half.

What if investors do not exercise the warrants before they expire? For example, it would not make sense to exercise them if the market price of the stock is less than the exercise price of the warrants. In that case, the entry would be as follows.

Paid-in Capital—Stock Warrants	294,118	
Paid-in Capital—Expired Stock Warrants		294,118

The additional paid-in capital remains in the company, but it is reclassified as expired stock warrants.

Incremental Method

In instances where a company cannot determine the fair value of either the warrants or the bonds, it applies the **incremental method**, as used in lump-sum security purchases (explained in Chapter 14). The company uses the security for which it can determine the fair value and allocates the remainder of the proceeds to the other security.

Example 15.7 Incremental Method—Detachable Warrants

FACTS Refer to the Durant Company detachable warrants in Example 15.6. Assume that the fair value of the Durant warrants is $300,000, but the company cannot determine the fair value of the bonds without the warrants.

QUESTION How would Durant allocate the proceeds between the bonds and warrants in this situation?

SOLUTION

The allocation between the bonds and warrants is as follows.

Lump-sum receipt	$10,000,000
Allocated to the warrants	(300,000)
Balance allocated to bonds	$ 9,700,000

Durant makes the following journal entries.

Cash	9,700,000	
Discount on Bonds Payable	300,000	
Bonds Payable		10,000,000
Cash	300,000	
Paid-in Capital—Stock Warrants		300,000

Rights to Subscribe to Additional Shares

If the directors of a corporation decide to issue new shares of stock, the old stockholders generally have the right to purchase newly issued shares in proportion to their holdings. This **preemptive privilege**, referred to as a **stock right**, saves existing stockholders from suffering a dilution of voting rights without their consent. Also, it may allow them to purchase stock somewhat below its fair value. Unlike the warrants issued with other securities, the warrants issued for stock rights are of short duration. A certificate is issued that represents the stock right. The certificate provides the following details.

- **The number of shares the holder of the right may purchase.** Each share of stock owned ordinarily gives the owner one stock right.
- **The price at which the new shares may be purchased.** The price is normally less than the current market price of such shares, which gives the rights a value in themselves.

From the time they are issued until they expire, holders of stock rights may purchase and sell them like any other security.

No journal entry is required when a company issues stock rights to existing stockholders because no stock has been issued and no cash has been received. The company does note in its records the number of rights issued to existing stockholders to ensure it has additional unissued stock registered for issuance in case the rights are exercised.

If holders exercise the stock rights, a cash payment of some type usually is involved. The company uses the same journal entry (debiting Cash and crediting Common Stock) as for the regular issuance of common stock.

Put It into Practice LOs 15.1 and 15.2

Account for Dilutive Securities

FACTS Clinger Company issued $2,000,000 of 5%, 10-year convertible bonds on April 1, 2025, at 98. The bonds pay interest on October 1 and April 1. Bond discount is amortized semiannually on a straight-line basis. On April 1, 2026, $1,500,000 of these bonds were converted into 30,000 shares of $2 par value common stock.

INSTRUCTIONS

a. Prepare the entry to record the issuance of the bonds on April 1, 2025.

b. Prepare the entry (entries) to record the conversion on April 1, 2026. (Book value method is used.) Assume that the entry to record amortization of the bond discount and interest payment has been made.

c. Assume now that instead of convertible bonds, Clinger issued $2,000,000 bonds without a conversion feature at 102 on April 1, 2025. Each $1,000 face value bond was issued with one detachable stock warrant. Shortly after issuance, the bonds were selling at 98. The warrants had a fair value of $30. Prepare the entry to record the issuance of the bonds and warrants.

SOLUTION

a.	Cash ($2,000,000 × .98)	1,960,000	
	Discount on Bonds Payable	40,000	
	Bonds Payable		2,000,000
b.	Bonds Payable	1,500,000	
	Discount on Bonds Payable		27,000*
	Common Stock (30,000 × $2)		60,000
	Paid-in Capital in Excess of Par		1,413,000

Discount amortization per interest payment period: $40,000 ÷ 20 periods = $2,000

*Unamortized discount on 100% of the bonds ($40,000 − $4,000)	$36,000
× % of bonds converted ($1,500,000 ÷ $2,000,000)	.75
Unamortized discount on converted bonds	$27,000
Carrying value of converted bonds ($1,500,000 − $27,000)	$1,473,000
Less: Par value of common stock	60,000
Paid-in capital in excess of par	$1,413,000

c.	Cash ($2,000,000 × 1.02)	2,040,000	
	Discount on Bonds Payable ($2,000,000 − $1,979,406)	20,594	
	Bonds Payable		2,000,000
	Paid-in Capital—Stock Warrants		60,594*

*Fair Value of Each Security	Fair Value	Relative Fair Value	Proceeds	Allocation of Proceeds
Bonds (no warrants)	$1,960,000 ($2,000,000 × .98)	($1,960,000 ÷ $2,020,000) ×	$2,040,000	$1,979,406
Warrants	60,000 (2,000 × $30)	($60,000 ÷ $2,020,000) ×	$2,040,000	60,594
	$2,020,000			$2,040,000

Discount on Bonds Payable

4/1/25	40,000	10/1/25	2,000
		4/1/26	2,000
		Bal.	36,000

15.3 Stock Compensation Plans

LEARNING OBJECTIVE 3

Describe the accounting and reporting for stock compensation plans.

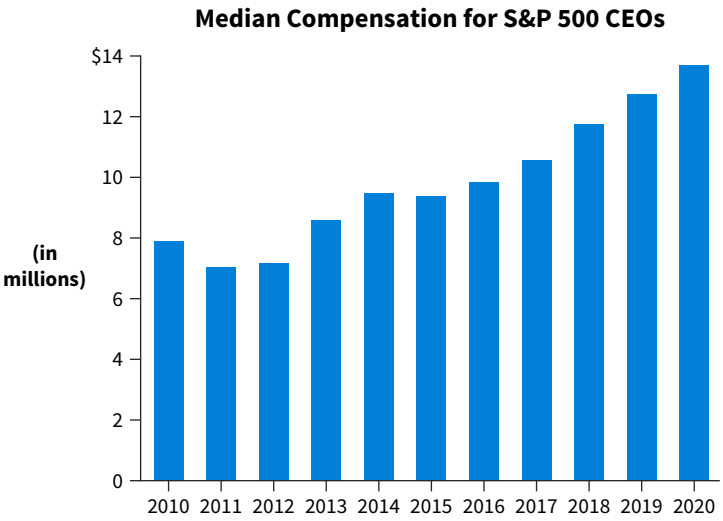
Effective compensation programs do the following.

1. Base compensation on employee and company performance.
2. Motivate employees to high levels of performance.
3. Help retain executives and allow for recruitment of new talent.
4. Maximize the employee's after-tax benefit and minimize the employer's after-tax cost.
5. Use performance criteria over which the employee has control.

Straight cash-compensation plans (salary and perhaps a bonus), though important, are oriented to the short run. Many companies recognize they need a longer-term compensation plan in addition to the cash component.

Long-term compensation plans attempt to develop company loyalty among key employees by giving them "a piece of the action"—that is, an equity interest. These plans, generally referred to as **stock-based compensation plans**, come in many forms. For example, consider the median compensation for S&P 500 CEOs shown in **Illustration 15.2**, much of which is in the form of stock-based compensation.

ILLUSTRATION 15.2 Trends and Magnitude of CEO Compensation



Company	Stock Compensation (in millions)	Stock Compensation as % of Revenue
Snap	$ 686.0	40%
Uber	4,596.0	33
Snowflake	78.4	30
Workday	859.6	24
Atlassian	313.4	19
ServiceNow	662.2	19
Zoom Video	73.1	12
Autodesk	362.4	11
Salesforce	1,785.0	10
Shopify	158.5	10

Sources: T. Francis and K. Broughton, "CEO Pay Surged in a Year of Upheaval and Leadership Challenges," *Wall Street Journal* (April 11, 2021); and FactSet and M. Cherney, "These Companies Pay the Most in Stock Compensation," *Barrons* (October 26, 2020).

To understand the substantial level of stock compensation offered by individual companies, Illustration 15.2 also presents the top 10 companies listed on Nasdaq and the NYSE, with a market value over $50 billion ranked by stock compensation as a percentage of revenue.

The companies shown in Illustration 15.2 are all emerging high-tech companies with high cash burn rates. As such, the best way for these companies to attract and compensate employees is by giving them a part of the action—in short, company stock. The ratio of stock compensation would be much different in well-established companies like **IBM**, **ExxonMobil**, or **Home Depot**. Indeed, the stock-based pay of the five key executives for S&P 500 companies accounted for just 1.5% of the companies' pretax income.

Stock Options

Stock options are a popular form of stock-based compensation. **Stock options** give key employees the **option** to purchase common stock at a given price over an extended period of time. Typically, there is a **service period**, or **vesting period**, over which the employees must work before they can use, or exercise, their stock options.

Suppose that as an employee of Hurdle Inc., you receive options to purchase 10,000 shares of Hurdle's common stock. The options have an exercise price of $20 and are good for 10 years. The service period is three years, which means that you cannot exercise your options until the three-year service period has ended. Let's discuss these options from your perspective by addressing some common questions listed in **Illustration 15.3**.

ILLUSTRATION 15.3 Stock Options from an Employee's Perspective

Questions from an Employee's Perspective	Answers
Is the company giving you stock?	No, the company is giving you the **option** to purchase stock at a specified price. You are not obligated to use the options. But if you do, you must pay for the stock at the specified exercise price of $20 per share.
When would it make sense for you to exercise your options?	Once the three-year service period has ended and you are vested in the options, the key factor in your decision to exercise your options is the market price of the stock. • Suppose the current market price of the stock is $30. Does it make sense for you to exercise your options? Yes! You can purchase the stock for $20, sell it for $30, and realize a gain on the transaction. Alternatively, you can hold the stock and hope the market price continues to increase and sell at a later date for even more earnings. • Suppose the current market price of the stock is $18. Does it make sense for you to exercise your options? No! You could purchase the stock cheaper in the market rather than exercising your options.
Are your options transferable?	No, you cannot sell or trade your options because they were granted to you as part of your unique compensation package.
Do your options expire?	Yes, options typically have an expiration date. If the market price of the stock never goes above the exercise price of the options, then you would not exercise, and they would expire.

Let's look at the options from the company's perspective. The date that Hurdle grants options to employees is called the **grant date**. Typically, the option exercise price is equal to or slightly greater than the market price of the stock on the grant date. Hurdle hopes that employees will be incentivized to higher levels of performance, which will add value to the company and increase the market price of Hurdle's stock. From an accounting standpoint, should Hurdle recognize an expense related to these stock options?

The answer is yes. This is because the options you received do have value. If the stock price goes above $20 any time in the next 10 years and you exercise the options, you may earn substantial compensation. For example, if at the end of the fourth year, the market price of the stock is $30 and you exercise your options, you earn $100,000 [10,000 options × ($30 − $20)], ignoring income taxes.

GAAP requires that companies recognize compensation cost using the **fair value method**. [2] The FASB position is that companies should base the accounting for the cost of employee services on the fair value of compensation paid.[3] This amount is presumed to be a measure of the value of the services received. The concept of fair value therefore applies to stock options as well as restricted-stock plans.

Accounting for Stock Options

In accounting for stock options, there are two main accounting issues:

1. **Determining compensation expense**. As mentioned, under the fair value method, companies compute total compensation expense based on the fair value of the options expected to vest on the date they grant the options to the employee(s) (i.e., the **grant date**). Public companies estimate fair value by using an option-pricing model, with some adjustments for the unique factors of employee stock options. No adjustments occur after the grant date in response to subsequent changes in the stock price—either up or down.
2. **Allocating compensation expense over an appropriate period**. In general, a company recognizes compensation expense in the periods in which its employees perform the service—the **service period**. Unless otherwise specified, the service period is the vesting period—the time between the grant date and the vesting date.[4] Thus, the company

[3] Under the fair value method, companies **use an acceptable option-pricing model to value the options at the grant date**. An option-pricing model is a statistical model that considers many factors that determine an option's underlying value, such as the volatility of the underlying stock, expected dividends over the option's life, and the expected life of the options. A commonly used model is based on the Black-Scholes formula. You can learn more about option-pricing models in an advanced finance course, *but for purposes of this course, the fair value of the stock options will be provided to you*.

[4] "To vest" means "to earn the rights to." An employee's award becomes vested at the date that the employee's right to receive or retain shares of stock or cash under the award is no longer contingent on remaining in the service of the employer.

determines total compensation cost at the grant date and allocates it to the periods benefited by its employees' services.

No journal entry is made on the grant date. The compensation expense is recorded as the employees perform services over the vesting period.

Example 15.8 Stock Compensation

FACTS On November 1, 2024, the stockholders of Dunder Mifflin Paper Company approve a plan that grants the company's five executives the options to purchase 2,000 shares each of the company's $1 par value common stock. The company grants the options on January 1, 2025. The executives may exercise the options at any time within the next 10 years after the 2-year service period. The option price per share is $60, and the market price of the stock at the date of grant is $70 per share. Under the fair value method, the company computes total compensation expense by applying the Black-Scholes option-pricing model. The fair value option-pricing model determines Dunder Mifflin's total compensation expense to be $220,000.

QUESTIONS How would you record (a) the grant of the options and (b) the compensation expense in 2025 and 2026?

SOLUTION

a. To record the granting of the option on January 1, 2025:

No entry is needed.

b. The service period is 2 years; therefore, compensation expense is allocated evenly over the 2-year period. To record compensation expense for 2025 (December 31, 2025):

Compensation Expense	110,000	
Paid-in Capital—Stock Options ($220,000 ÷ 2)		110,000

To record compensation expense for 2026 (December 31, 2026):

Compensation Expense	110,000	
Paid-in Capital—Stock Options		110,000

As indicated, compensation expense is allocated evenly over the 2-year service period.

Paid-in Capital—Stock Options

	12/31/25 110,000
	12/31/26 110,000
	Bal. 220,000

Exercise Once the service period is complete, employees can exercise the options. Continuing with Example 15.8, if Dunder Mifflin's executives exercise 2,000 of the 10,000 options (20% of the options) on June 1, 2028 (three years and five months after date of grant), the company records the following journal entry.

June 1, 2028

Cash (2,000 × $60)	120,000	
Paid-in Capital—Stock Options (.20 × $220,000)	44,000	
Common Stock (2,000 × $1)		2,000
Paid-in Capital in Excess of Par—Common Stock		162,000

Paid-in Capital—Stock Options

	12/31/25 110,000
	12/31/26 110,000
	Bal. 220,000
6/1/28 44,000	
	Bal. 176,000

Expiration Remember, the options have an expiration date. Some employees may let their options expire, or it may never be favorable for employees to exercise their options. If Dunder Mifflin's executives fail to exercise the remaining stock options before their expiration date, the company transfers the balance in the Paid-in Capital—Stock Options account to a more properly titled paid-in capital account, such as Paid-in Capital—Expired Stock Options. Dunder Mifflin records this transaction at the date of expiration as follows.

Paid-in Capital—Stock Options

	2025 110,000
	2026 110,000
	12/31/26 Bal. 220,000
6/1/28 44,000	
	176,000
1/1/35 176,000	
	0

January 1, 2035 (expiration date)

Paid-in Capital—Stock Options	176,000	
Paid-in Capital—Expired Stock Options (.80 × $220,000)		176,000

Paid-in Capital—Expired Stock Options

	1/1/35 176,000
	176,000

Notice that no adjustment is made to compensation expense when the options expire. The executives still provided services during the service period, therefore, the company incurred compensation expense.

Forfeiture What happens if the employee leaves the company and **does not satisfy the service requirements?** The employee forfeits the stock options. In this case, the company should adjust the estimate of compensation expense recorded in the current period (as a change in estimate). A company records this change in estimate by debiting Paid-in Capital—Stock Options and crediting Compensation Expense for the amount of cumulative compensation expense recorded to date, which decreases compensation expense in the period of forfeiture.

Summary of Stock Options

Illustration 15.4 presents a summary of the key dates for the accounting for a stock option plan.

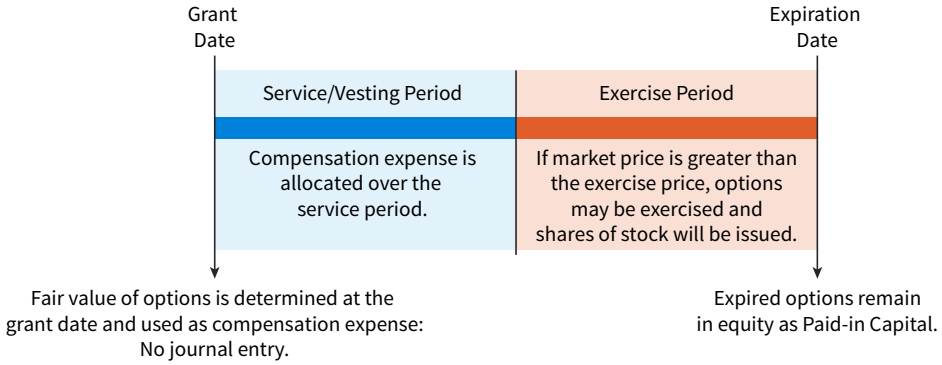

Grant Date
Expiration Date
Service/Vesting Period
Exercise Period
Compensation expense is allocated over the service period.
If market price is greater than the exercise price, options may be exercised and shares of stock will be issued.
Fair value of options is determined at the grant date and used as compensation expense: No journal entry.
Expired options remain in equity as Paid-in Capital.

ILLUSTRATION 15.4 Summary of Stock Option Accounting

Accounting Matters — What's the Debate About?

GAAP requires companies to calculate compensation expense related to employee stock options based on the fair value of the options on the date they were granted. However, the fair model was not always GAAP.

Before the fair value method, companies used the intrinsic-value method, which measured compensation expense based on what the employee would receive today if the option was immediately exercised, or the difference between the market price and exercise price of the stock on the grant date. What's the problem? On the grant date, the market and exercise price are often the same! Under the intrinsic-value method, companies would issue stock options and avoid recording any compensation expense.

As you can imagine, many companies were less than excited about the adoption of the fair value model, as it would add a significant expense to their income statement simply as a result of an accounting change. But the stock options **did** have value. Smaller technology companies were very vocal in their opposition to the fair value method, arguing that stock options were the only way they could attract top executives.

While the FASB was in the crosshairs of significant debate, reasonable heads did prevail. Warren Buffett, a prominent supporter of the fair value method, reported that when making portfolio decisions, he would often adjust reported earnings per share by 5 to 10% to account for stock-option compensation expense. As data in the following table show, Buffett's adjustments were conservative.

Company	Reported Diluted EPS	If Option Expensed*	Decline in Diluted EPS
Home Depot	$1.88	$1.78	5%
Merck	3.03	2.79	8
IBM	4.32	3.74	13
Amazon.com	0.08	0.07	13
McDonald's	1.15	0.98	15
Adobe	1.10	0.33	70
Yahoo	0.37	0.05	86
Apple	0.19	(0.27)	loss

* The Black-Scholes method was used by all companies to calculate the options expense.

Source: N. Apostolou and D. Crumbley, "Accounting for Stock Options Update on the Continuing Conflict," *The CPA Journal Online* (August 2005).

Restricted-Stock Plans

Another form of stock compensation are restricted-stock plans. In a **restricted-stock plan**, the company transfers stock (or units) to employees subject to an agreement that the stock cannot be sold, transferred, or pledged until vesting occurs. Restricted-stock plans are subject to forfeiture if the conditions of vesting are not met.[5] Restricted-stock plans are of two types: (1) **restricted-stock awards** and (2) **restricted-stock units**. The accounting for these two plans follows the same principles used to record stock options.

Determine the total compensation expense based on the fair value of the stock (units) on the date it is granted.

Recognize compensation in the periods in which the employees perform service.

Make no adjustments to compensation expense due to changes in the fair value of the stock (units) after the grant date.

From an accounting point of view, a restricted-stock award plan transfers stock to the employee at the grant date. In a restricted-stock unit plan, the employee receives a commitment from the company to transfer stock at the time vesting conditions are met. This commitment is represented by units that become stock when vesting occurs, similar to a stock option when exercised.

Restricted-Stock Award

On the grant date, the company issues stock to the employees, which results in a journal entry crediting common stock and the related paid-in capital in excess of par account if the stock has a par value. The company debits a contra stockholders' equity account called **Unearned Compensation** for the total fair value of the restricted-stock plan. The Unearned Compensation account represents the cost of employee services yet to be performed.

Example 15.9
Restricted-Stock Award

FACTS On January 1, 2025, Sparks, Inc. issues 1,000 shares of restricted stock to its CEO, Lisa Leslie. Sparks' stock has a fair value of $20 per share on January 1, 2025. Additional information is as follows.

1. The service period related to the restricted stock is 5 years.
2. Vesting occurs if Leslie stays with the company for a 5-year period.
3. The par value of the stock is $1 per share.

QUESTION What entries should Sparks make on January 1, 2025, and December 31, 2025?

SOLUTION

To record the granting of the restricted-stock award:

	January 1, 2025	
Unearned Compensation (1,000 × $20)	20,000	
Common Stock (1,000 × $1)		1,000
Paid-in Capital in Excess of Par—Common Stock (1,000 × $19)		19,000

[5]Most companies base vesting on future service for a period of generally three to five years. Vesting may also be conditioned on some performance target such as revenue, net income, cash flows, or some combination of these three factors. The employee also collects dividends on the restricted stock, and these dividends generally must be repaid if forfeiture occurs.

The credits to Common Stock and Paid-in Capital in Excess of Par—Common Stock indicate that Sparks has issued shares of stock. The debit to Unearned Compensation (often referred to as Deferred Compensation Expense) identifies the total compensation expense the company will recognize over the 5-year period. **Unearned Compensation represents the cost of services yet to be performed, which is not an asset.** Consequently, the company reports Unearned Compensation in stockholders' equity in the balance sheet, as a contra equity account (similar to the reporting of treasury stock at cost).

To record compensation expense of $4,000 ($20,000 ÷ 5 years):

December 31, 2025

Compensation Expense	4,000	
Unearned Compensation		4,000

Sparks records compensation expense of $4,000 for each of the next 4 years (2026, 2027, 2028, and 2029).

Unearned Compensation

1/1/25	20,000		
		12/31/25	4,000
		12/31/26	4,000
12/31/26 Bal.	12,000		
		2/3/27	12,000
	0		

In Example 15.9, what happens if Leslie leaves the company before the five years has elapsed? In this situation, Leslie forfeits her rights to the stock. Sparks reverses the compensation expense already recorded, debits the common stock accounts reflecting Leslie's forfeiture, and removes the remaining balance of Unearned Compensation.

Example 15.10 Restricted-Stock Forfeiture

FACTS Refer to Example 15.9. Lisa Leslie leaves the company on February 3, 2027 (before any expense has been recorded during 2027).

QUESTION What entry would you make to account for this forfeiture?

SOLUTION

To record the restricted-stock forfeiture:

Common Stock (1,000 × $1)	1,000	
Paid-in Capital in Excess of Par—Common Stock	19,000	
Compensation Expense ($4,000 × 2)		8,000
Unearned Compensation		12,000

In this situation, Sparks reverses the compensation expense of $8,000 recorded through 2026.

Compensation Expense

12/31/25	4,000		
12/31/26	4,000		
	8,000		
		2/3/27	8,000
	0		

In Sparks' restricted-stock plan in Example 15.10, vesting never occurred because Leslie left the company before she met the service requirement. Similar to the forfeiture of stock options, because Leslie was never vested, she had to forfeit her shares. Therefore, the company must reverse compensation expense recorded to date.

Restricted-Stock Units

What if Sparks uses restricted-stock units?

Example 15.11 Restricted-Stock Units

FACTS On January 1, 2025, Sparks, Inc. issues 1,000 shares of restricted-stock units to its CEO, Lisa Leslie. Each unit has a fair value of $20 per share, which is equal to the fair value of one share of stock. Additional information is as follows.

1. The service period related to the restricted stock units is 5 years.
2. Vesting occurs if Leslie stays with the company for 5 years.
3. The par value of the stock is $1 per share.

QUESTION What entries should Sparks make on January 1, 2025, and December 31, 2025, to record the issuance of these restricted-stock units?

SOLUTION

The total compensation expense is $20,000 (1,000 shares × $20). Sparks does not make any entry on January 1, 2025, because Sparks only provides a promise to provide these units if Leslie meets the vesting requirements. Unlike the restricted-stock award, no shares of stock are issued on January 1, 2025. On December 31, 2025, Sparks records compensation expense of $4,000 ($20,000 ÷ 5 years) as follows.

Compensation Expense	4,000	
Paid-in Capital—Restricted-Stock Units		4,000

Sparks records compensation expense of $4,000 for each of the next 4 years (2026, 2027, 2028, and 2029).

Comparing Examples 15.9 and 15.11, the compensation expense is the same for both the restricted-stock award and the restricted-stock units. For the restricted-stock units, assuming that Leslie meets the vesting requirements, Sparks transfers common stock to Leslie and makes the following entry on December 31, 2029.

Paid-in Capital—Restricted-Stock Units (1,000 × $20)	20,000	
Common Stock (1,000 × $1)		1,000
Paid-in Capital in Excess of Par—Common Stock		19,000

What if Leslie leaves the company before completing the service period? Just as before, she forfeits her rights to receive the stock and the company reverses compensation expense that was previously recorded.

Example 15.12
Restricted-Stock Units—No Vesting

FACTS Refer to the information in Example 15.11. Lisa Leslie leaves the company on February 1, 2027, before any expense has been recorded during 2027.

QUESTION What entry would you make to record this forfeiture?

SOLUTION

To record the restricted-stock unit forfeiture:

Paid-in Capital—Restricted-Stock Units	8,000	
Compensation Expense		8,000

In this situation, Sparks reverses the compensation expense of $8,000 recorded through 2026, similar to the accounting for the restricted-stock and stock-option plans.

Employee Stock-Purchase Plans

Employee stock-purchase plans (ESPPs) generally permit employees to purchase stock at a discounted price for a short period of time. The company often uses such plans to secure equity capital or to induce widespread ownership of its common stock among employees. These plans are considered compensatory unless they satisfy **all three** of the following conditions.

1. Substantially all full-time employees may participate on an equitable basis.
2. The discount from market is small. That is, the discount does not exceed the per share amount of costs avoided by not having to raise cash in a public offering. If the amount of the discount is 5% or less, no compensation needs to be recorded.
3. The plan offers no substantive option feature.

Example 15.13
Stock-Purchase Plan

FACTS Assume that **Publix Super Markets**' stock-purchase plan allowed all employees to purchase its stock at a 5% reduction from market price for a short period of time.

QUESTION How should the reduction in price to the employees affect compensation expense?

SOLUTION

The reduction from market price is not considered compensatory. Why? Because the per share amount of the costs avoided by not having to raise the cash in a public offering equals 5%. Publix does not need to record compensation expense related to this employee stock-purchase plan.

Companies that offer their employees a **compensatory** ESPP should record the compensation expense over the service life of the employees. It will be difficult for some companies to claim that their ESPPs are non-compensatory (and therefore not record compensation expense) unless they change their discount policy, which in the past often was 15%. If they change their discount policy to 5%, participation in these plans will undoubtedly be lower.

Trends in Stock Compensation Plans

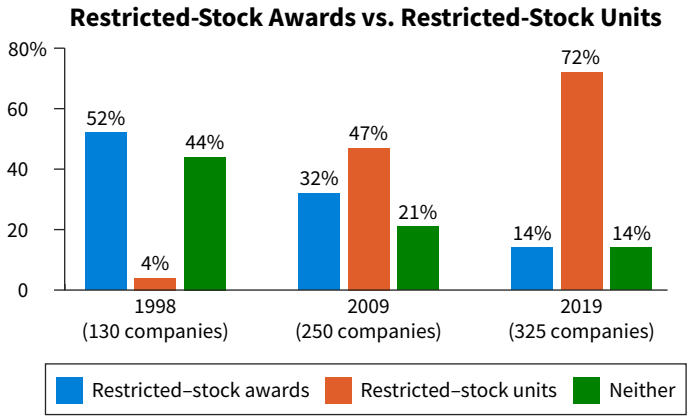
Since the FASB mandated the fair value method for expensing of stock options, companies now rely more on restricted-stock plans than options to compensate employees. The major advantages of restricted-stock plans are as follows.

1. **Restricted stock never becomes completely worthless.** In contrast, if the stock market price does not exceed the exercise price for a stock option, the options are worthless. The restricted stock, however, still has value.
2. **Restricted stock generally results in less dilution to existing stockholders.** Restricted-stock awards are usually one-half to one-third the size of stock options. For example, if a company issues stock options on 1,000 shares, an equivalent restricted-stock offering might be 333 to 500 shares. The reason for the difference is that at the end of the vesting period, the restricted stock will have value, whereas the stock options may not. As a result, fewer shares are involved in restricted-stock plans. Therefore, less dilution results if the stock price rises.
3. **Restricted stock better aligns the employee incentives with the companies' incentives.** The holder of restricted stock is essentially a stockholder and should be more interested in the long-term objectives of the company. In contrast, the recipients of stock options often have a short-run focus, which leads to taking risks to hype the stock price for short-term gain to the detriment of the long-term.

Movement to Restricted-Stock Units

Within the restricted-stock plans, there has been a major shift to the restricted-stock unit plans, as indicated in **Illustration 15.5**.

ILLUSTRATION 15.5 Growth of Restricted-Stock Unit Plans



Source: AYCO–Goldman Sachs, *Compensation and Benefits Digest* (October 11, 2019).

Reasons for this shift to restricted-stock units include administrative convenience and lower cost. For example, the accounting and administration for restricted-stock units only results in an accounting entry. In a restricted-stock awards plan, actual stock is issued, which counts as outstanding stock and increases the number of shares outstanding. In addition, the restricted-stock awards involve more dilution initially than restricted-stock units. Tax considerations also can have an effect.

Time-Based versus Performance Vesting

Companies often have relied on time-based vesting (often referred to as pay-for-pulse vesting, in that employees simply need to keep their job to vest) rather than performance-based vesting. Performance-based vesting plans use such measures as total stockholder return; cash flows; environmental, social, governance (ESG) performance; and earnings to determine the compensation expense. Performance-based vesting is growing in popularity as it allows employees to align themselves with the long-term goals of the company.

Regardless of the type of plan, required expense recognition of compensation related to stock options and restricted stock represents a significant improvement in financial reporting. By leaving stock-based compensation expense out of income, reported income is biased. Biased reporting not only raises concerns about the credibility of companies' reports but also of financial reporting in general. Even good companies get tainted by the biased reporting of a few "bad apples." If we write standards to achieve some social, economic, or public policy goal, financial reporting loses its credibility.

Disclosure of Compensation Plans

Companies must fully disclose the status of their compensation plans at the end of the periods presented. To meet these objectives, companies must make extensive disclosures. Specifically, a company with one or more share-based payment arrangements must disclose information that enables users of the financial statements to understand:

1. The nature and terms of such arrangements that existed during the period and the potential effects of those arrangements on shareholders.
2. The effect on the income statement of compensation cost arising from share-based payment arrangements.
3. The method of estimating the fair value of the goods or services received, or the fair value of the equity instruments granted (or offered to grant), during the period.
4. The cash flow effects resulting from share-based payment arrangements.

Illustration 15.6 presents the type of information disclosed for compensation plans.

ILLUSTRATION 15.6 Stock-Option Plan Disclosure

Stock-Option Plan

The Company has a share-based compensation plan. The compensation cost that has been charged against income for the plan was $29.4 million, and $28.7 million for 2025 and 2024, respectively.

The Company's 2025 Employee Share-Option Plan (the Plan), which is shareholder-approved, permits the grant of share options and shares to its employees for up to 8 million shares of common stock. The Company believes that such awards better align the interests of its employees with those of its shareholders. Option awards are generally granted with an exercise price equal to the market price of the Company's stock at the date of grant; those option awards generally vest based on 5 years of continuous service and have 10-year contractual terms. Share awards generally vest over five years. Certain option and share awards provide for accelerated vesting if there is a change in control (as defined by the Plan).

Description of plan

The fair value of each option award is estimated on the date of grant using an option valuation model based on the assumptions noted in the following table.

	2025	2024
Expected volatility	25%–40%	24%–38%
Weighted-average volatility	33%	30%
Expected dividends	1.5%	1.5%
Expected term (in years)	5.3–7.8	5.5–8.0
Risk-free rate	6.3%–11.2%	6.0%–10.0%

Valuation model assumptions

A summary of option activity under the Plan as of December 31, 2025, and changes during the year then ended are presented below.

Options	Shares (000)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
Outstanding at January 1, 2025	4,660	$42		
Granted	950	60		
Exercised	(800)	36		
Forfeited or expired	(80)	59		
Outstanding at December 31, 2025	4,730	$47	6.5	$85,140
Exercisable at December 31, 2025	3,159	$41	4.0	$75,816

Option plan activity and balances

The weighted-average grant-date fair value of options granted during the years 2025 and 2024 was $19.57 and $17.46, respectively. The total intrinsic value of options exercised during the years ended December 31, 2025 and 2024, was $25.2 million, and $20.9 million, respectively.

As of December 31, 2025, there was $25.9 million of total unrecognized compensation cost related to nonvested share-based compensation arrangements granted under the Plan. That cost is expected to be recognized over a weighted-average period of 4.9 years. The total fair value of shares vested during the years ended December 31, 2025 and 2024, was $22.8 million and $21 million, respectively.

Option expense

Restricted-Stock Awards

The Company also has a restricted-stock plan. The Plan is intended to retain and motivate the Company's Chief Executive Officer over the term of the award and to bring his total compensation package closer to median levels for Chief Executive Officers of comparable companies. The fair value of grants during the year was $1,889,000, or $35.68 per share, equivalent to 92% of the market price of a share of the Company's Common Stock on the date the award was granted.

Restricted-stock activity for the year ended 2025 is as follows.

	Shares	Price
Outstanding at December 31, 2024	57,990	—
Granted	149,000	$12.68
Vested	(19,330)	—
Forfeited	—	—
Outstanding at December 31, 2025	187,660	

Restricted- stock plan details

Put It into Practice LO 15.3

Implement Stock Compensation

FACTS The following are transactions that Harden Company is evaluating related to compensation for its employees.

1. Issue 100,000 shares of restricted stock to its employees on January 1, 2025. Harden will not permit the employees to sell their units over the vesting period of 4 years. The employees must stay with the company for 4 years. Otherwise, the stock is forfeited.
2. Issue 1,000,000 stock options to its employees on January 1, 2025. The fair value of the options is determined to be $2 as determined by the Black-Sholes option pricing model. The exercise price of the options is $13.The options will vest over 4 years (the service period is 4 years).
3. Issue 120,000 restricted-stock units to its employees on January 1, 2025. Vesting occurs after 5 years. If the employees fail to stay with the company for 5 years, the stock units are forfeited.

The par value of the Harden common stock is $1 per share. Harden's share price on January 1, 2025, is $12; its share price on December 31, 2025, is $8 per share.

INSTRUCTIONS

a. Prepare journal entries for each compensation plan on January 1, 2025.

b. Prepare journal entries for each compensation plan on December 31, 2025.

c. Assuming that employees holding stock options exercise their options on January 15, 2029, prepare the journal entry for the exercise (the market price is $20 per share).

d. Prepare the journal entry on January 2, 2026, if one of the employees holding 2,000 restricted-stock units resigned as of December 31, 2025.

SOLUTION

a. **January 1, 2025**

1.	Unearned Compensation ($12 × 100,000)	1,200,000	
	Common Stock ($1 × 100,000)		100,000
	Paid-in Capital in Excess of Par—Common Stock		1,100,000

2. and 3.

No entry

b. **December 31, 2025**

1.	Compensation Expense [($12 × 100,000) ÷ 4]	300,000	
	Unearned Compensation		300,000
2.	Compensation Expense [(1,000,000 × $2) ÷ 4]	500,000	
	Paid-in Capital—Stock Options		500,000
3.	Compensation Expense [($12 × 120,000) ÷ 5]	288,000	
	Paid-in Capital—Restricted-Stock Units		288,000

c. **January 15, 2029**

Cash ($13 × 1,000,000)	13,000,000	
Paid-in Capital—Stock Options (4 × $500,000)	2,000,000	
Common Stock ($1 × 1,000,000)		1,000,000
Paid-in Capital in Excess of Par—Common Stock		14,000,000

d. **June 2, 2026**

Paid-in Capital—Restricted-Stock Units	4,800	
Compensation Expense [($12 × 2,000) ÷ 5]		4,800

15.4 Basic Earnings per Share

LEARNING OBJECTIVE 4

Compute basic earnings per share.

Stockholders and potential investors widely use **earnings per share (EPS)** in evaluating the profitability of a company. As a result, EPS receives much attention by the financial press. Recall from Chapter 3 that EPS indicates the income earned by **each share of common stock**. In general, the higher the EPS, the better.

Because of the importance of EPS information, most companies must report this information on the face of the income statement. [3] The exception, due to cost-benefit considerations, is nonpublic companies. Generally, companies report EPS information below net income in the income statement. **Illustration 15.7** shows Oscar Co.'s income statement presentation of EPS assuming Oscar has net income of $300,000 and a weighted average of 100,000 shares of common stock outstanding for the year. The resulting EPS is $3.00 ($300,000 ÷ 100,000).

Net income	$300,000
Earnings per share	$3.00

ILLUSTRATION 15.7 Income Statement Presentation of EPS

When the income statement contains discontinued operations, companies should disclose EPS for continuing and discontinued operations as shown in **Illustration 15.8**.

Earnings per share:	
Income from continuing operations	$4.00
Loss from discontinued operations, net of tax	0.60
Net income	$3.40

ILLUSTRATION 15.8 Income Statement Presentation of EPS Components

These disclosures enable the user of the financial statements to recognize the effects on EPS of income from continuing operations, as distinguished from income or loss from discontinued operations.[6]

Earnings per Share—Simple Capital Structure

The calculation of a corporation's EPS is driven by its capital structure. There are two general types of capital structure:

- **Simple capital structure**. If a corporation has only common stock outstanding, then it has a simple capital structure. The corporation can also have preferred stock outstanding, but it **cannot** have a conversion feature in which the preferred stock can be converted to common stock and still have a simple capital structure.
- **Complex capital structure**. If a corporation has any type of dilutive security outstanding, such as convertible bonds, convertible preferred stock, stock warrants, or stock options, then it automatically has a complex capital structure.

[6]Companies should present, either on the face of the income statement or in the notes to the financial statements, per share amounts for discontinued operations.

This section focuses on the computation of EPS for a simple capital structure. The calculation involves net income plus the following two items:

1. Preferred stock dividends.
2. Weighted-average number of shares outstanding.

Preferred Stock Dividends

EPS relates to earnings per **common share**. If a company has preferred stock shareholders, a portion of earnings may be distributed to the preferred stock shareholders in the form of preferred stock dividends. Therefore, a company must **subtract the current-year preferred stock dividend from net income to arrive at income available to common stockholders**. The formula for computing EPS is as follows.

$$\text{Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted-Average Common Shares Outstanding}}$$

Recall that preferred stock can be cumulative or noncumulative. This designation impacts the numerator of EPS as follows.

- **Cumulative preferred stock**. Most preferred stock is cumulative and typically a dividend is declared each year. **But even if a dividend is not declared, it is always subtracted in the EPS numerator.** The rationale is that dividends in arrears on cumulative preferred stock will eventually be paid in the future when the corporation declares a dividend. When a company has dividends in arrears and ultimately declares a dividend, the year the dividend is declared, they will still only subtract that year's dividend from net income (dividends in arrears from previous years had already been deducted from net income during the previous year's EPS calculation).
- **Noncumulative preferred stock**. The dividend for noncumulative preferred stock is subtracted in the EPS numerator **only if it is declared during the year**. If no dividend is declared, then it is not included in the EPS calculation. The rationale is that passed dividends on noncumulative preferred stock will not be paid in the future and therefore do not impact earnings available to common stockholders.

It's important to note that the focus is on the **declaration** of dividends, not the actual payment of dividends. For **noncumulative** preferred stock, as long as dividends are **declared** during the year, the dividend is subtracted in the EPS numerator.

In reporting earnings per share information, a company must determine income available to common stockholders. To do so, the company subtracts dividends on preferred stock from each of the intermediate components of income (income from continuing operations) and finally from net income.

- If a company declares dividends on preferred stock and a net loss occurs, **the company adds the preferred dividend to the loss** (thus increasing the amount of the loss) for purposes of computing the loss per share.
- If the preferred stock is cumulative and the company has net income but declares no dividend in the current year, it subtracts **an amount equal to the dividend that it should have declared for the current year only**.
- If the stock is cumulative and the company reports a net loss, but declares no dividend in the current year, it **adds** an amount equal to the dividend to the net loss.

The company should also include dividends in arrears in the previous years' presentations.

Weighted-Average Number of Shares Outstanding

In all computations of EPS, the **weighted-average number of shares outstanding** during the period constitutes the basis for the per share amounts reported. Shares issued or purchased during the period affect the amount outstanding. Companies must **weight the shares by the fraction of the period they are outstanding**. The rationale for this approach is to find the equivalent number of whole shares outstanding for the year.

Example 15.14
Weighted-Average Shares Outstanding

FACTS Franks Inc. has changes in its common stock shares outstanding for the period as follows.

Date	Share Changes	Shares Outstanding
January 1	Beginning balance	90,000
April 1	Issued 30,000 shares for cash	30,000
		120,000
July 1	Purchased 39,000 shares for the treasury	(39,000)
		81,000
November 1	Issued 60,000 shares for cash	60,000
December 31	Ending balance	141,000

QUESTION How would you compute Franks' weighted-average number of shares outstanding?

SOLUTION

Franks computes the weighted-average number of shares outstanding as follows.

Dates Outstanding	(A) Shares Outstanding	(B) Fraction of Year	(C) Weighted Shares (A × B)
Jan.1–Mar. 31	90,000	3/12	22,500
Apr. 1–June 30	120,000	3/12	30,000
July 1–Oct. 31	81,000	4/12	27,000
Nov. 1–Dec. 31	141,000	2/12	23,500
Weighted-average number of shares outstanding		12/12	103,000

As indicated, 90,000 shares were outstanding for 3 months, which is equivalent to 22,500 whole shares for the entire year. Because Franks issued additional shares on April 1, it must weight these shares for the time outstanding. When the company purchased 39,000 shares for the treasury on July 1, it reduced the shares outstanding. Therefore, from July 1 to October 31, only 81,000 shares were outstanding, which is equivalent to 27,000 shares. The issuance of 60,000 shares increases shares outstanding for the last 2 months of the year. Notice that the actual shares outstanding at year-end, 141,000, is different from the weighted-average shares outstanding, 103,000.

Stock Dividends and Stock Splits You learned about stock dividends and stock splits in Chapter 14. Recall that stock dividends and stock splits do not:

- Change total stockholders' equity.
- Increase or decrease a company's assets.
- Change an individual stockholders' ownership percentage.

Essentially, stock dividends and stock splits take the existing shares of a company and cut them into smaller pieces. For purposes of calculating the weighted-average number of shares, a company must treat stock dividends and stock splits as if they happened at the beginning of the period.

Example 15.15
Stock Dividend—Shares Outstanding

FACTS Koepke Corporation had 100,000 shares outstanding on January 1 and issued a 25% stock dividend on June 30. No other common stock activity occurred for the rest of the year.

QUESTION How would you compute Koepke's weighted-average number of shares outstanding for the year?

SOLUTION

For purposes of computing a weighted-average for the current year, Koepke assumes the additional 25,000 shares outstanding as a result of the stock dividend to be outstanding since the beginning of the year. Thus, the weighted-average for the year for Koepke is 125,000 shares.

As shown in Example 15.15, Koepke restated the shares outstanding before the stock dividend to compute the weighted-average number of common shares. Restating allows valid comparisons of EPS between periods before and after the stock split or stock dividend. Now let's look at a more complex example with Koepke Corporation.

Example 15.16
Stock Repurchases—Shares Outstanding

FACTS Koepke Corporation had changes in its common stock shares during the year as follows.

Date	Share Changes	Shares Outstanding
January 1	Beginning balance	100,000
March 1	Issued 20,000 shares for cash	20,000
		120,000
June 1	60,000 additional shares (50% stock dividend)	60,000
		180,000
November 1	Issued 30,000 shares for cash	30,000
December 31	Ending balance	210,000

QUESTION How should Koepke compute the weighted-average number of shares outstanding for the year?

SOLUTION

Koepke computes the weighted-average number of shares outstanding as follows.

Dates Outstanding	(A) Shares Outstanding	(B) Restatement	(C) Fraction of Year	(D) Weighted Shares A × B × C
Jan. 1–Feb. 28	100,000	1.50	2/12	25,000
Mar. 1–May 31	120,000	1.50	3/12	45,000
June 1–Oct. 31	180,000		5/12	75,000
Nov. 1–Dec. 31	210,000		2/12	35,000
Weighted-average number of shares outstanding				180,000

Koepke must restate the shares outstanding **prior** to the stock dividend by 50%. That is accomplished by multiplying the outstanding shares by 1.50. The company adjusts the shares outstanding from January 1 to May 31 for the stock dividend, so that it now states these shares on the same basis as shares issued after the stock dividend. Koepke does not restate shares issued after the stock dividend because they are on the new basis.

If a company executes a stock split, **the same type of treatment applies**. For example, in a 2-for-1 stock split, the shares outstanding **prior** to the split would be doubled, or multiplied by 2. If a stock dividend or stock split occurs **after** the end of the year but before issuing the financial statements, a company must restate the weighted-average number of shares outstanding for the year (and any other years presented in comparative form).

Example 15.17
Stock Split—Shares Outstanding

FACTS Brooks Enterprises computes its weighted-average number of shares as 100,000 for the year ended December 31, 2025. On January 15, 2026, before issuing the financial statements, the company splits its stock 3 for 1.

QUESTION What is Brooks' weighted-average number of shares after the stock split?

SOLUTION

In this case, the weighted-average number of shares used in computing earnings per share for 2025 is now 300,000 shares (100,000 × 3). If providing earnings per share information for 2024 as comparative information, Brooks must also adjust it for the stock split.

Put It into Practice LO 15.4
Compute Basic EPS

FACTS Bryson Corporation has income from continuing items of $580,000 and a gain on discontinued operations, net of tax, of $240,000. In addition, it has declared preferred dividends of $1 per share on 100,000 shares of preferred stock outstanding. The changes in Bryson's common stock shares outstanding during 2025 are as follows.

Date	Share Changes	Shares Outstanding
January 1	Beginning balance	180,000
May 1	Purchased 30,000 shares for the treasury	(30,000)
		150,000
July 1	Additional shares due to 3-for-1 stock split	300,000
		450,000
December 31	Issued 50,000 shares for cash	50,000
December 31	Ending balance	500,000

INSTRUCTIONS

a. Compute Bryson's earnings per share.

b. Indicate the presentation of earnings per share on the face of the income statement.

SOLUTION

a. To compute the earnings per share information, Bryson determines the weighted-average number of shares outstanding as follows.

Dates Outstanding	(A) Shares Outstanding	(B) Restatement	(C) Fraction of Year	(D) Weighted Shares A × B × C
Jan. 1–Apr. 30	180,000	3	4/12	180,000
May 1–June 30	150,000	3	2/12	75,000
July 1–Dec. 31	450,000		6/12	225,000
Weighted-average number of shares outstanding				480,000

In computing the weighted-average number of shares, the company ignores the shares sold on December 31, 2025, because they have not been outstanding during the year. Since Bryson has discontinued operations, EPS must be calculated separately for income from continuing operations and the discontinued operations. The preferred stock dividends are subtracted from income from continuing operations to arrive at **income available to common shareholders**. The preferred stock dividends do not impact the gain from discontinued operations. The calculations are as follows.

Income from continuing operations: $\dfrac{\$580{,}000 - \$100{,}000}{480{,}000 \text{ weighted shares}} = \$1.00$

Gain on discontinued operations, net of tax: $\dfrac{\$240{,}000}{480{,}000 \text{ weighted shares}} = \$0.50$

b. Bryson must disclose the per share amount for the discontinued operations (net of tax) either on the face of the income statement or in the notes to the financial statements. The income and per share information are reported on the face of Bryson's income statement as follows.

Income from continuing operations	$580,000
Gain on discontinued operations, net of tax	240,000
Net income	$820,000
Earnings per share:	
Income from continuing operations	$1.00
Discontinued operations, net of tax	0.50
Net income	$1.50

15.5 Diluted Earnings per Share

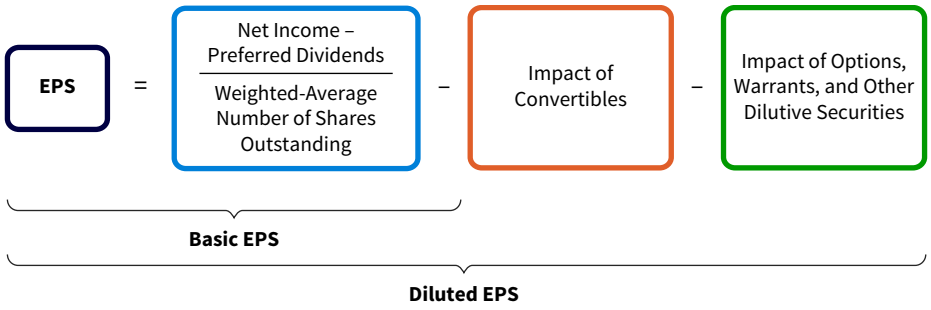
LEARNING OBJECTIVE 5

Compute diluted earnings per share.

The EPS discussion to this point applies to **basic EPS** for a simple capital structure. One problem with a **basic EPS** computation is that it fails to recognize the potential impact of a corporation's dilutive securities. As discussed earlier, **dilutive securities** are securities that can be converted to common stock.[7] Upon conversion or exercise by the holder, the dilutive securities reduce (dilute) earnings per share. This adverse effect on EPS can be significant and, more importantly, **unexpected** unless financial statements call attention to their potential dilutive effect.

As discussed, a complex capital structure exists when a corporation has convertible securities, options, warrants, or other rights that upon conversion or exercise could dilute earnings per share. When a company has a complex capital structure, **it generally reports both basic and diluted earnings per share**. Computing diluted EPS is similar to computing basic EPS. **Illustration 15.9** shows the relationship between basic EPS and diluted EPS.

ILLUSTRATION 15.9 Relationship Between Basic and Diluted EPS



Some securities are antidilutive.

- **Antidilutive securities** are securities that upon conversion or exercise **increase** earnings per share (or reduce the loss per share).
- Companies with complex capital structures will not report diluted EPS if the securities in their capital structure are antidilutive.

[7] Issuance of these types of securities is typical in mergers and compensation plans.

The purpose of presenting both basic and diluted EPS is to inform financial statement users of situations that will likely occur (basic EPS) and also to provide "worst case" dilutive situations (dilutive EPS). If the securities are antidilutive, the likelihood of conversion or exercise is considered remote. Thus, companies that have only antidilutive securities must report only the basic EPS number. We illustrated the computation of basic EPS in the prior section.

Diluted EPS—Convertible Securities

At conversion, companies exchange convertible securities for common stock. Companies measure the dilutive effects of potential conversion on EPS using the **if-converted method**. For convertible bonds, this method assumes:

1. The bonds were converted at the beginning of the period, or at the time of issuance of the bonds if issued during the period.
2. The elimination of related interest, net of tax. If bonds are converted to common stock, then the company does not pay interest on the bonds. Therefore, interest expense, net of tax, **is added back to net income** in the numerator of EPS.

As a result, the additional shares assumed issued increase the **denominator**—the weighted-average number of shares outstanding. The amount of interest expense, net of tax associated with those potential common shares, increases the **numerator**—net income.

Example 15.18
Diluted EPS Numerator—If-Converted Method

FACTS Mayfield Corporation has net income of $210,000 for the year and a weighted-average number of common shares outstanding during the period of 100,000 shares. The basic EPS is therefore $2.10 ($210,000 ÷ 100,000).

The company has two convertible debenture bond issues outstanding.

- A 6% issue sold at par (total $1,000,000) in a prior year and convertible into 30,000 common shares.
- A 10% issue sold at par (total $1,000,000) on April 1 of the current year and convertible into 36,000 common shares.

QUESTION What is the adjusted net income for the numerator of Mayfield's diluted EPS? The tax rate is 20%.

SOLUTION

To determine the numerator for diluted EPS, Mayfield adds back the interest on the if-converted securities, less the related tax effect, as follows.

Net income for the year	$210,000
Add: Adjustment for interest (net of tax)	
6% debentures ($60,000 × [1 − 0.20])	48,000
10% debentures ($100,000 × 9/12 × [1 − 0.20])	60,000
Adjusted net income	$318,000

To summarize:

- The 6% convertible bonds were issued in a prior year, so they would be outstanding for the entire current year. Because the if-converted method assumes conversion as of the beginning of the year, Mayfield assumes that it pays no interest on the convertible bonds during the year. The interest on the 6% convertibles is $60,000 for the year ($1,000,000 × .06). Net income will be higher if interest is added back; therefore, the increased tax expense is $12,000 ($60,000 × 0.20). The interest added back, net of taxes, is $48,000 [$60,000 − $12,000, or simply $60,000 × (1 − 0.20)].
- Mayfield issues the 10% convertible bonds after the beginning of the year, on April 1. In other words, it considers these shares to have been outstanding from April 1 to the end of the year. As a result, the interest adjustment to the numerator for these bonds includes the interest for only 9 months. The interest added back on the 10% convertible is $60,000 [$1,000,000 × 0.10 × 9/12 year × (1 − 0.20)]. The final item in the calculation shows the adjusted net income. This amount becomes the numerator for Mayfield's computation of diluted EPS.

Continuing with Example 15.18, what about the denominator for Mayfield's diluted EPS?

Example 15.19
Diluted EPS Denominator—If-Converted Method

FACTS Refer to the data in Example 15.18 for Mayfield Corporation.

QUESTIONS (a) What is the weighted-average shares outstanding in the denominator of Mayfield's diluted EPS, and (b) how will Mayfield's EPS be reported in its income statement?

SOLUTION

a. Mayfield calculates the weighted-average number of shares outstanding as follows.

Weighted-average number of shares outstanding	100,000
Add: Shares assumed to be issued	
6% debentures (as of beginning of year)	30,000
10% debentures (as of date of issue, April 1; 9/12 × 36,000)	27,000
Weighted-average number of shares adjusted for dilutive securities	157,000

As indicated, the process starts with the weighted-average shares from basic EPS and then increases the denominator for the number of shares assumed to be issued if the bonds are converted. Notice the shares related to the 10% bonds are weighted by 9/12 since they were issued on April 1 of the current year. This number of shares (157,000) becomes the denominator for Mayfield's computation of diluted earnings per share.

b. In its income statement, Mayfield reports basic and diluted EPS as follows.

Net income for the year	$210,000
Earnings per Share (Note X)	
Basic earnings per share ($210,000 ÷ 100,000)	$2.10
Diluted earnings per share ($318,000 ÷ 157,000)	$2.03

Because diluted EPS, $2.03, is less than basic EPS, $2.10, we know the convertible bonds are dilutive.

Other Factors

Examples 15.18 and 15.19 assumed that Mayfield sold its bonds at the face amount. If it instead sold the bonds at a premium or discount, the company must make sure they are adding back interest expense, net of tax, to net income. Recall that interest expense is cash interest plus or minus discount or premium amortization.

Another consideration is the conversion rate on a dilutive security may change during the period in which the security is outstanding. For the diluted EPS computation in such a situation, the **company uses the most dilutive conversion rate available**.

Example 15.20
Diluted EPS Conversion Rate—If-Converted Method

FACTS Curry Company issued a convertible bond on January 1, 2024, with a conversion rate of 10 common shares for each bond starting January 1, 2026. Beginning January 1, 2029, the conversion rate is 12 common shares for each bond. Beginning January 1, 2033, it is 15 common shares for each bond.

QUESTION What conversion rate should you use to compute Curry's diluted EPS?

SOLUTION

In computing diluted EPS in 2024, Curry uses the conversion rate of 15 shares to one bond, which is the most dilutive conversion rate.

A final issue relates to preferred stock. For example, assume that Mayfield's 6% convertible debentures were instead 6% convertible **preferred stock**. The preferred stock would be convertible into common shares, so Mayfield includes the common shares in the denominator of diluted EPS. The company does **not** subtract preferred dividends from net income in computing the numerator. Why not? Because the preferred stock is assumed to be converted as of the beginning of the year, so there would be no preferred stock dividend for the year. The company uses net income as the numerator—it computes **no tax effect** because preferred dividends generally are not tax-deductible.

Example 15.21
Convertible Preferred Stock

FACTS Curry Company had 100,000 shares of $5 par, 6% cumulative preferred stock outstanding all year. Each share of preferred stock is convertible into 7 shares of common stock. Curry Company had net income of $1,500,000 and 300,000 shares of common stock outstanding all year.

QUESTION What is the basic and diluted EPS for Curry Company?

SOLUTION

$$\text{Basic EPS: } \frac{\$1{,}500{,}000 - \$30{,}000^*}{300{,}000} = \$4.90$$

*$500,000 (100,000 shares × $5 par) × .06

$$\text{Diluted EPS: } \frac{\$1{,}500{,}000}{300{,}000 + 700{,}000^*} = \$1.50$$

*100,000 × 7

Diluted EPS—Options and Warrants

A company includes in diluted EPS stock options and warrants outstanding (whether or not presently exercisable), unless they are antidilutive. Remember, when evaluating for EPS, the options and warrants have not actually been exercised. For purposes of calculating diluted EPS, a company **assumes** options and warrants are exercised if they are dilutive.

Companies use the **treasury-stock method** to include options and warrants in diluted EPS. As with the if-converted method, the treasury-stock method **assumes** the options or warrants are exercised at the beginning of the year or the date of issue, if later. The treasury-stock method has three steps as follows.

Calculate the cash proceeds the company will receive if all options or warrants are exercised at the exercise price.

Assume the company will use the cash proceeds to purchase common stock for the treasury. We assume the company pays the market price to purchase the treasury shares. As a result, the cash proceeds will not be sufficient to buy back all the shares needed to issue to the option or warrant holders. Why? Because the options or warrants are dilutive, which means the exercise price is **less than** the market price of the stock.

Calculate the number of **incremental shares** that would be issued to the option or warrant holders. Take the total number of shares to be issued to option or warrant holders and subtract the number of treasury shares from Step 2 to arrive at the incremental shares. The incremental shares will be added to the denominator of diluted EPS.

Only the incremental shares are considered dilutive. The incremental shares are essentially an issuance of new shares of stock. With dilutive options and warrants, there is **no impact to the numerator of diluted EPS**. The only impact is the addition of the incremental shares in the denominator.[8]

Example 15.22 Incremental Shares—Treasury-Stock Method

FACTS Enzo Inc. has 1,500 options outstanding at an exercise price of $30 for a common share, and a common stock average market price per share of $50.

QUESTION What are the incremental shares outstanding, applying the treasury-stock method?

SOLUTION

The stock options are dilutive because the exercise price ($30) is **less than** the average market price ($50). Follow the three steps of the treasury-stock method to determine the incremental shares.

1. Calculate cash proceeds to the company if options are exercised: 1,500 options × $30 = $45,000
2. Assume cash proceeds are used to purchase treasury stock at the average market price:

$$\frac{\$45{,}000}{\$50} = 900 \text{ shares}$$

3. Calculate the number of incremental shares:

$$1{,}500 \text{ shares} - 900 \text{ treasury shares} = 600 \text{ incremental shares}$$

The 600 incremental shares are added to the denominator of diluted EPS.

For both options and warrants, exercise is assumed only if the average market price of the stock exceeds the exercise price during the reported period.[9] As a practical matter, a simple average of the weekly or monthly prices is adequate, so long as the prices do not fluctuate significantly.

Example 15.23 Treasury-Stock Method

FACTS McIlroy Industries, Inc. has net income for the period of $220,000. The weighted-average number of shares outstanding for the period was 100,000 shares. The number of shares related to options outstanding (although not exercisable at this time), at an option price of $20 per share, is 5,000 shares. The average market price of the common stock during the year was $28.

QUESTION How should McIlroy compute its basic and diluted EPS?

[8]Generally, it is easy to determine if options and warrants are antidilutive by comparing the exercise price to the average market price of the stock. If the exercise price is **greater than** the average market price, the option or warrant is antidilutive. Why? Because it does not make sense to exercise the options or warrants because it would be cheaper to purchase the stock directly from the market.

[9]The incremental number of shares may be more simply computed:

$$\frac{\text{Market Price} - \text{Option Price}}{\text{Market Price}} \times \text{Number of Options} = \text{Number of Shares}$$

$$\frac{\$50 - \$30}{\$50} \times 1{,}500 \text{ options} = 600 \text{ shares}$$

SOLUTION

The computation of basic and diluted EPS, using the treasury-stock method, is as follows.

	Basic Earnings per Share	Diluted Earnings per Share	
Number of shares related to options		5,000	
Price per share		× $20	
Proceeds upon exercise of options		$100,000	
Average market price of common stock		$28	
Treasury shares that could be repurchased with proceeds ($100,000 ÷ $28)		3,571	
Excess of shares under option over the treasury shares that could be repurchased (5,000 − 3,571)—potential common incremental shares		1,429	
Average number of common shares outstanding	100,000	100,000	
Total average number of common shares outstanding and potential common shares	100,000 (A)	101,429	(C)
Net income for the year	$220,000 (B)	$220,000	(D)
Earnings per share	$2.20 (B ÷ A)	$2.17	(D ÷ C)

Diluted EPS ($2.17) is less than basic EPS ($2.20), confirming that the options are dilutive.

Contingent Issue Agreement

In business combinations, the acquirer may promise to issue additional shares—referred to as **contingent shares**—under certain conditions. Sometimes companies issue these contingent shares as a result of a **passage-of-time condition** or upon the attainment of a **certain earnings or market price level**. If this passage-of-time condition occurs during the current year or if companies meet the earnings or market price **by the end of the year**, companies consider the contingent shares as outstanding for the computation of diluted earnings per share.[10]

Example 15.24
Contingent Issue

FACTS Watts Corporation purchased Cardoza Company and agreed to give Cardoza's stockholders 20,000 additional shares in 2028 if Cardoza's net income in 2027 is $90,000 or more. In 2026, Cardoza's net income is $100,000.

QUESTION Should Cordoza include the contingent shares in computing earnings per share?

SOLUTION

Because Cardoza has already attained the 2027 stipulated earnings of $90,000 in 2026, in computing diluted earnings per share for 2026, Watts would include the 20,000 contingent shares in the shares-outstanding computation.

Antidilution Revisited

In computing diluted EPS, a company must consider the aggregate of all dilutive securities. But first it must determine which potentially dilutive securities are in fact individually dilutive and which are antidilutive. **A company should exclude any security that is antidilutive**.

[10]In addition to contingent issuances of stock, other situations that might lead to dilution are the issuance of participating securities and two-class common shares. The reporting of these types of securities in EPS computations is beyond the scope of this text.

Recall that including antidilutive securities in EPS computations increases EPS (or reduces net loss per share).

- With options or warrants, whenever the exercise price **exceeds** the market price, the security is antidilutive.
- Convertible debt is antidilutive if the addition to income of the interest (net of tax) causes a greater percentage increase in income (numerator) than conversion of the bonds causes a percentage increase in common and potentially dilutive shares (denominator).

In other words, convertible debt is antidilutive if conversion of the security causes common stock earnings to increase by a greater amount per additional common share than EPS was before the conversion.

Example 15.25
Antidilution

FACTS Stricker Corporation has a 6%, $1,000,000 debt issue that is convertible into 10,000 common shares. Net income for the year is $210,000, the weighted-average number of common shares outstanding is 100,000 shares, and the tax rate is 20%.

QUESTION Should Stricker include the effects of the convertible debt in its computation of diluted EPS?

SOLUTION

In this situation, assumed conversion of the debt into common stock at the beginning of the year requires adjustments of net income and the weighted-average number of shares outstanding, as follows.

Net income for the year	$210,000	Average number of shares outstanding	100,000
Add: Adjustment for interest (net of tax) on 6% debentures [$60,000 × (1 − 0.20)]	48,000	Add: Shares issued upon assumed conversion of debt	10,000
Adjusted net income	$258,000	Average number of common and potential common shares outstanding	110,000

Basic EPS = $210,000 ÷ 100,000 = $2.10

Diluted EPS = $258,000 ÷ 110,000 = $2.35 = **Antidilutive**

As a shortcut, Stricker can also identify the convertible debt as antidilutive by comparing the EPS resulting from conversion, $4.80 ($48,000 additional earnings ÷ 10,000 additional shares), with EPS before inclusion of the convertible debt, $2.10. Since $4.80 is greater than $2.10, the convertible bonds are antidilutive.

Companies should ignore antidilutive securities in all calculations and in computing diluted EPS. This approach is reasonable. The profession's intent was to inform the investor of the possible dilution that might occur in reported EPS and not to be concerned with securities that, if converted or exercised, would result in an increase in EPS. Appendix 15B provides an extended example of how companies consider antidilution in a complex situation with multiple securities.

EPS Presentation and Disclosure

Illustration 15.10 shows how a company with a complex capital structure would present its EPS information.

ILLUSTRATION 15.10 EPS Presentation—Complex Capital Structure

Earnings per common share	
Basic earnings per share	$3.30
Diluted earnings per share	$2.70

When the earnings of a period include discontinued operations, a company should show per share amounts (where applicable) for the following: income from continuing operations, discontinued operations, and net income. Companies that report a discontinued operation should present per share amounts **for this line item** either on the face of the income statement or in the notes to the financial statements. Illustration 15.11 shows a presentation reporting discontinued operations.

Basic earnings per share	
Income from continuing operations	$3.80
Discontinued operations (loss)	(0.80)
Net income	$3.00
Diluted earnings per share	
Income from continuing operations	$3.35
Discontinued operations (loss)	(0.65)
Net income	$2.70

ILLUSTRATION 15.11 EPS Presentation, with Discontinued Operations

A company must show EPS amounts for all periods presented. Also, the company should restate all prior period EPS amounts presented for stock dividends and stock splits. If it reports diluted EPS data for at least one period, the company should report such data for all periods presented, even if it is the same as basic EPS. When a company restates results of operations of a prior period as a result of an error or a change in accounting principle, it should also restate the EPS data shown for the prior periods.

Complex capital structures and dual presentation of EPS require the following additional disclosures in note form.

1. Description of pertinent rights and privileges of the various securities outstanding.
2. A reconciliation of the numerators and denominators of the basic and diluted per share computations, including individual income and share amount effects of all securities that affect EPS.
3. The effect given preferred dividends in determining income available to common stockholders in computing basic EPS.
4. Securities that could potentially dilute basic EPS in the future that were excluded in the computation because they would be antidilutive.
5. Effect of conversions subsequent to year-end but before issuing statements.

Illustration 15.12 presents the reconciliation and the related disclosure to meet the requirements of this standard. [4]

	For the Year Ended 2025		
	Income (Numerator)	**Shares (Denominator)**	**Per Share Amount**
Income from continuing operations	$7,500,000		
Less: Preferred stock dividends	45,000		
Basic EPS	7,455,000	3,991,666	$1.87
Warrants	-0-	30,768	
Convertible preferred stock	45,000	308,333	
4% convertible bonds (net of tax)	60,000	50,000	
Diluted EPS	$7,560,000	4,380,767	$1.73

Stock options to purchase 1,000,000 shares of common stock at $85 per share were outstanding during the second half of 2025 but were not included in the computation of diluted EPS because the options' exercise price was greater than the average market price of the common shares. The options were still outstanding at the end of year 2025 and expire on June 30, 2030.

ILLUSTRATION 15.12 Reconciliation for Basic and Diluted EPS

To summarize the importance of EPS information to various company stakeholders, consider the following.

1. **EPS is used by investors and creditors to understand the profitability and the related valuation of a company.** For example, EPS and stock price are often correlated with each other. In examining **Costco Wholesale Corporation**'s financial statements, its EPS increased each year. It reported basic EPS of $7.15 in 2018, $8.32 in 2019, and $9.05 in 2020, or an increase of 29%. Its share price increased 52% over the same period of time.
2. **EPS is used in the price earnings ratio.** The price-earnings ratio is the market price of a share of the stock divided by EPS. For example, if the company's market price per share is $100 and its EPS is $20 per share, the price-earnings ratio is 5 ($100 ÷ $20). This ratio indicates how many years it will take a company's earnings to equal its share price. In other words, given the company's present earnings, it would take 5 years of accumulated earnings to equal the current price of the company's stock. A high price-earnings ratio suggests that a company may have less profitability and financial flexibility than a company which has a lower price-earnings ratio.
3. **EPS is often compared to dividends per share to understand how well the earnings can sustain the dividend distributions by the company**. Often referred to as the dividend coverage, it is computed by dividing a company's EPS by its dividend per share.

Finally, a word of caution—be careful in assessing profitability using only a single ratio like EPS. Earnings, for example, can sometimes be manipulated through accounting changes, substantial cost reductions, or unusual gains that are not sustainable. In addition, as noted in Chapter 14, outstanding shares can be reduced by purchase of treasury stock, which will increase EPS in the short run. That is why using many different measures to evaluate profitability should be used.

Summary of EPS Computation

As you can see, computation of EPS is a complex issue. It is a controversial area because many securities, although technically not common stock, have many of its basic characteristics. Indeed, some companies have issued these other securities rather than common stock to avoid an adverse dilutive effect on EPS. **Illustrations 15.13** and **15.14** display the elementary points of calculating EPS in a simple capital structure and in a complex capital structure.

ILLUSTRATION 15.13 Calculating EPS, Simple Capital Structure

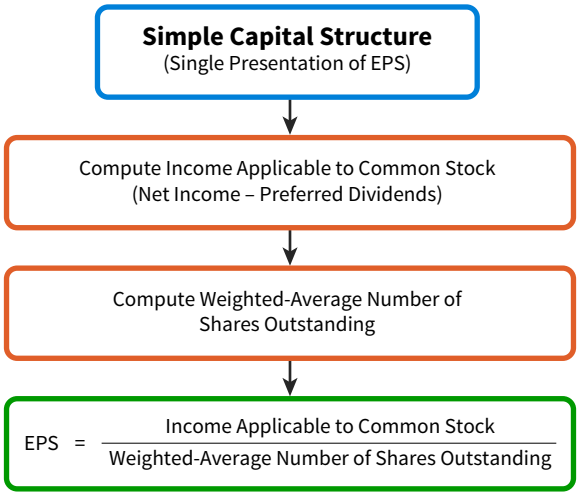
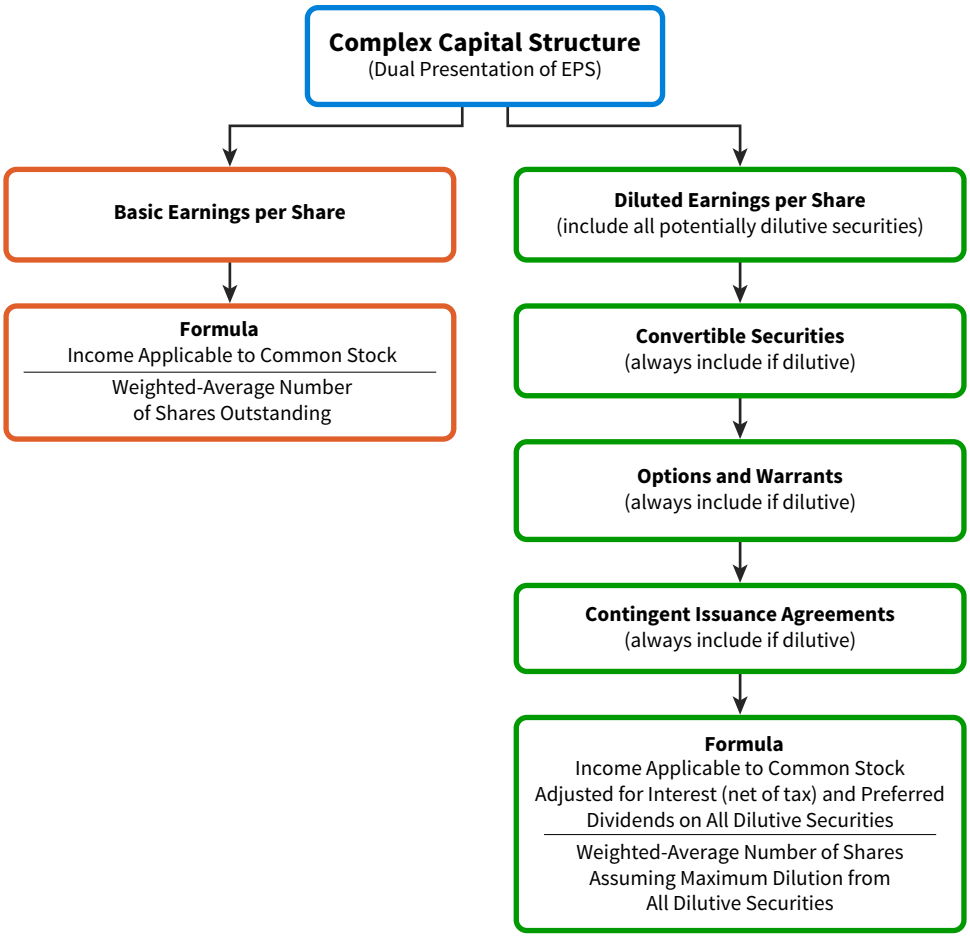

Simple Capital Structure
(Single Presentation of EPS)
Compute Income Applicable to Common Stock
(Net Income – Preferred Dividends)
Compute Weighted-Average Number of
Shares Outstanding
EPS = Income Applicable to Common Stock / Weighted-Average Number of Shares Outstanding

ILLUSTRATION 15.14 Calculating EPS, Complex Capital Structure

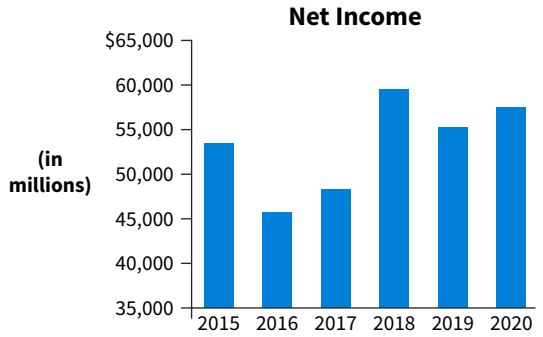

Complex Capital Structure
(Dual Presentation of EPS)
Basic Earnings per Share
Formula
Income Applicable to Common Stock
Weighted-Average Number of Shares Outstanding
Diluted Earnings per Share
(include all potentially dilutive securities)
Convertible Securities
(always include if dilutive)
Options and Warrants
(always include if dilutive)
Contingent Issuance Agreements
(always include if dilutive)
Formula
Income Applicable to Common Stock Adjusted for Interest (net of tax) and Preferred Dividends on All Dilutive Securities
Weighted-Average Number of Shares Assuming Maximum Dilution from All Dilutive Securities

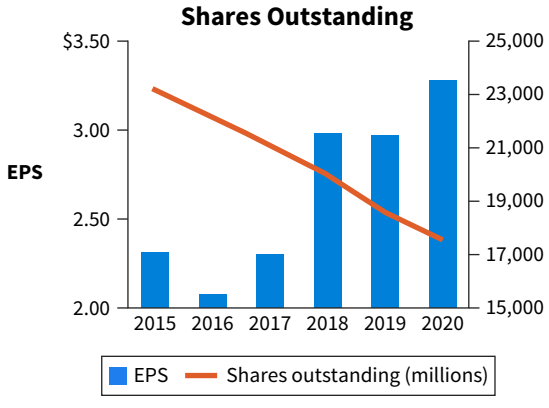
Analytics in Action: Earnings per Share versus Net Income

Does an increase in EPS always mean that net income is increasing? No! Earnings per share is a function of changes in the numerator (income) and the denominator (shares outstanding). Many companies reduce the number of shares outstanding by repurchasing their own shares as part of a stock buyback program. **Apple** has been a champion of stock buybacks in recent years, repurchasing its own stock worth billions of dollars.

While Apple's net income (the chart below on the left) shows a gradually increasing trend, its EPS (the chart below on the right) shows a steep increase. Why the disconnect? Apple's stock repurchases have resulted in lower shares outstanding (the orange line in the chart below) in the EPS denominator, giving Apple a soaring EPS.

With changes to tax rates and lower borrowing costs due to the Covid-19 global pandemic, Apple shows no sign of slowing down its stock repurchase plans. Investors beware! Stock buybacks can give the perception that earnings are increasing, making it important to fully analyze the components of this key metric–both the numerator **and** the denominator.





Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Put It into Practice LO 15.5
Compute Diluted EPS

FACTS Scutaro Company reported net income in 2025 of $30,000 and $27,000 in 2024. On January 1, 2024, Scutaro issued 10-year, $200,000 face value, 6% bonds at par (payable annually on January 1). Each $1,000 bond is convertible into 30 shares of Scutaro $2 par value common stock. The company has had 10,000 shares of common stock (and no preferred stock) outstanding throughout its life. None of the bonds have been converted as of the end of 2025.

Scutaro also has adopted a stock-option plan that granted options to key executives to purchase 4,000 shares of the company's common stock. The options were granted on January 2, 2024, and were exercisable 2 years after the date of grant if the grantee was still an employee of the company (the service period is 2 years). The options expire 6 years from the date of grant. The option price was set at $4.

INSTRUCTIONS

a. Prepare the journal entry Scutaro would have made on January 1, 2024, to record the issuance of the bonds.

b. Prepare the journal entry to record interest expense in 2025.

c. Compute basic and diluted earnings per share for Scutaro for 2025 and 2024. Scutaro's average stock price was $4.40 in 2024 and $5 in 2025. (Ignore income taxes.)

d. Assume that 75% of the holders of Scutaro's convertible bonds convert their bonds to stock on June 30, 2026, when Scutaro's stock is trading at $8 per share. Scutaro pays $2 per bond to induce bondholders to convert. Prepare the journal entry to record the conversion.

SOLUTION

a. Under GAAP, proceeds from the issuance of convertible debt are recorded entirely as debt:

Cash	200,000	
Bonds Payable		200,000

b. To record interest expense for 2025 ($200,000 × .06):

December 31, 2025

Interest Expense	12,000	
Interest Payable		12,000

c. To compute basic and diluted EPS:

	2025	2024
Basic EPS		
Net income (a)	$ 30,000	$27,000
Outstanding shares (b)	10,000	10,000
Basic EPS (a ÷ b)	$ 3.00	$ 2.70
Diluted EPS		
Net income	$ 30,000	$27,000
Add: Interest savings ($200,000 × .06)	12,000	12,000
Adjusted net income (a)	$ 42,000	$39,000
Outstanding shares	10,000	10,000
Shares upon conversion (200 × 30)	6,000	6,000
Options (treasury-stock method)	800*	364*
Total shares for diluted EPS (b)	16,800	16,364
Diluted EPS (a ÷ b)	$ 2.50	$ 2.38

*Treasury-stock method:

	2025		2024	
Cash proceeds	$16,000	($4 × 4,000)	$16,000	($4 × 4,000)
Shares repurchased	3,200	($16,000 ÷ $5)	3,636	($16,000 ÷ $4.40)
Net shares issued	800	(4,000 − 3,200)	364	(4,000 − 3,636)

d. **June 30, 2026**

Bond Conversion Expense (150 × $2)	300	
Bonds Payable (150 × $1,000)	150,000	
Common Stock (4,500 × $2)		9,000
Paid-in Capital in Excess of Par—Common Stock*		141,000
Cash		300

*$150,000 − $9,000 = $141,000 increase in paid-in capital account

APPENDIX **15A**

Accounting for Stock-Appreciation Rights

LEARNING OBJECTIVE *6

Explain the accounting for stock-appreciation rights plans.

A major disadvantage of many stock-option plans is that an executive must pay income tax on the difference between the market price of the stock and the option price at the **date of exercise**. This feature of stock-option plans (those referred to as **nonqualified**) can be a financial hardship for an executive who wishes to keep the stock (rather than sell it immediately) because he or she would have to pay not only income tax but the option price as well. In another type of plan (an **incentive plan**), the executive pays no taxes at exercise but may need to borrow to finance the exercise price, which leads to related interest cost.

One solution to this problem was the creation of **stock-appreciation rights (SARs)**.

- In this type of plan, the company gives an executive the right to receive compensation equal to the share appreciation.
- **Share appreciation** is the excess of the market price of the stock at the date of exercise over a pre-established price.

The company may pay the share appreciation in cash, shares, or a combination of both.

The major advantage of SARs is that the executive often does not have to make a cash outlay at the date of exercise, but receives a payment for the share appreciation. Unlike shares acquired under a stock-option plan, the company does not issue the shares that constitute the basis for computing the appreciation in a SARs plan. Rather, the company simply awards the executive cash or stock having a fair value equivalent to the appreciation. The accounting for stock-appreciation rights depends on whether the company classifies the rights as equity or as a liability.

SARs—Share-Based Equity Awards

Companies classify SARs as **equity awards** if at the date of exercise, the holder receives shares of stock from the company upon exercise. In essence, SARs are essentially equivalent to a stock option. The major difference relates to the form of payment. With the stock option, the holder pays the exercise price and then receives the stock. In an equity SAR, the holder receives shares in an amount equal to the **share-price appreciation** (the difference between the market price and the pre-established price). The accounting for SARs when they are equity awards follows the accounting used for stock options. At the date of grant, the company determines a fair value for the SAR and then allocates this amount to compensation expense over the service period of the employees.

SARs—Share-Based Liability Awards

Companies classify SARs as liability awards if at the date of exercise, the holder receives a cash payment. In this case, the holder is not receiving additional shares of stock but a cash payment equal to the amount of share-price appreciation. The company's compensation expense therefore changes as the value of the liability changes.

A company uses the following approach to record share-based liability awards.

1. Measure the fair value of the award at the grant date and accrue compensation over the service period.
2. Remeasure the fair value each reporting period, until the award is settled. Adjust the compensation cost each period for changes in fair value prorated for the portion of the service period completed.
3. Once the service period is completed, determine compensation expense each subsequent period by reporting the full change in market price as an adjustment to compensation expense.

For liability awards, the company estimates the fair value of the SARs using an option-pricing model. The company then allocates this total estimated compensation cost over the service period, recording expense (or a decrease in expense if fair value declines) in each period. At the end of each period, total compensation expense reported to date should equal the percentage of the total service period that has elapsed, multiplied by the total estimated compensation cost.

For example, assume that the service period is 20% complete and total estimated compensation is $100,000. The company reports cumulative compensation expense to date of $20,000 ($100,000 × 0.20).

The method of allocating compensation expense is called the **percentage approach**.

- In this method, in the first year of, say, a four-year plan, the company charges one-fourth of the estimated cost to date.
- In the second year, it charges off two-fourths, or 50%, of the estimated cost to date, less the amount already recognized in the first year.
- In the third year, it charges off three-fourths of the estimated cost to date, less the amount recognized previously.
- In the fourth year, it charges off the remaining compensation expense.

A special problem arises when the exercise date is later than the service period. In the previous example, if the stock-appreciation rights were not exercised at the end of four years, in the fifth year the company would have to account for the difference in the market price and the pre-established price. In this case, the company adjusts compensation expense whenever a change in the market price of the stock **occurs in subsequent reporting periods**, **until the rights expire or are exercised**, **whichever comes first**.

Increases or decreases in the fair value of the SAR between the date of grant and the exercise date therefore result in a change in the measure of compensation. Some periods will have credits to compensation expense if the fair value decreases from one period to the next. The credit to compensation expense, however, cannot exceed previously recognized compensation expense. In other words, **cumulative compensation expense cannot be negative**.

Stock-Appreciation Rights Example

Augusta Hotels, Inc. establishes a stock-appreciation rights plan on January 1, 2025. The plan entitles executives to receive cash at the date of exercise for the difference between the market price of the stock and the pre-established price of $10 on 10,000 SARs. The fair value of the SARs on December 31, 2025, is $3, and the service period runs for two years (2025–2026). **Illustration 15A.1** indicates the amount of compensation expense to be recorded each period, assuming that the executives hold the SARs for three years, at which time they exercise the rights.

ILLUSTRATION 15A.1
Compensation Expense, Stock-Appreciation Rights

Stock-Appreciation Rights
Schedule of Compensation Expense

(1) Date	(2) Fair Value	(3) Cumulative Compensation Recognizable[a]	(4) Percentage Accrued[b]	(5) Cumulative Compensation Accrued to Date	Expense 2025	Expense 2026	Expense 2027
12/31/25	$3	$30,000	50%	$15,000	$15,000		
				55,000		$55,000	
12/31/26	7	70,000	100%	70,000			
				(20,000)			$(20,000)
12/31/27	5	50,000	100%	$50,000			

[a]Cumulative compensation for unexercised SARs to be allocated to periods of service.

[b]The percentage accrued is based upon a 2-year service period (2025–2026).

In 2025, Augusta Hotels records compensation expense of $15,000 because 50% of the $30,000 total compensation cost estimated at December 31, 2025, is allocable to 2025. In 2026, the fair value increased to $7 per right ($70,000 total). The company recorded additional compensation expense of $55,000 ($70,000 − $15,000).

The executives held the SARs through 2027, during which time the fair value declined to $5 (and the obligation to the executives equals $50,000). Augusta Hotels recognizes the decrease by recording a $20,000 credit to Compensation Expense and a debit to Liability Under Stock-Appreciation Plan. Note that after the service period ends, since the rights are still outstanding, the company adjusts the rights to market at December 31, 2027. Any such credit to compensation expense cannot exceed previous charges to expense attributable to that plan.

As the company records the compensation expense each period, the corresponding credit is to a liability account, because the company will pay the stock appreciation in cash. Augusta Hotels records compensation expense in the first year as follows.

Compensation Expense	15,000	
Liability Under Stock-Appreciation Plan		15,000

The company makes a similar entry in 2026 to credit the liability account for $55,000. In 2027, when it records negative compensation expense, Augusta would debit the account for $20,000. The entry to record the negative compensation expense is as follows.

Liability Under Stock-Appreciation Plan	20,000	
Compensation Expense		20,000

At December 31, 2027, the executives receive $50,000 (which equals the market price of the shares less the pre-established price). Augusta would remove the liability with the following entry.

Liability Under Stock-Appreciation Plan	50,000	
Cash		50,000

Compensation expense can increase or decrease substantially from one period to the next. The reason is that compensation expense is remeasured each year, which can lead to large swings in compensation expense.

Liability Under Stock-Appreciation Plan

		2025	15,000
		2026	55,000
		Bal.	70,000
2027	20,000		
		Bal.	50,000
12/31/27	50,000		
			0

APPENDIX 15B

Comprehensive Earnings per Share Example

LEARNING OBJECTIVE *7

Compute earnings per share in a complex situation.

This appendix illustrates the method of computing dilution when many securities are involved. Illustration 15B.1 presents the section of the balance sheet of Webster Corporation for analysis. Assumptions related to the capital structure follow the balance sheet.

ILLUSTRATION 15B.1 Balance Sheet for Comprehensive Illustration

Webster Corporation
Balance Sheet (partial)
At December 31, 2025

Long-term debt	
Notes payable, 14%	$ 1,000,000
8% convertible bonds payable	2,500,000
10% convertible bonds payable	2,500,000
Total long-term debt	$ 6,000,000
Stockholders' equity	
7% cumulative, convertible preferred stock, par value $100, 100,000 shares authorized, 25,000 shares issued and outstanding	$ 2,500,000
Common stock, par value 15,000,000 shares authorized, 500,000 shares issued and outstanding	500,000
Additional paid-in capital	2,000,000
Retained earnings	9,000,000
Total stockholders' equity	$14,000,000

Notes and Assumptions
December 31, 2025

1. Options were granted in July 2023 to purchase 50,000 shares of common stock at $20 per share. The average market price of Webster's common stock during 2025 was $30 per share. All options are still outstanding at the end of 2025.
2. Both the 8% and 10% convertible bonds were issued in 2024 at face value. Each convertible bond is convertible into 40 shares of common stock. (Each bond has a face value of $1,000.)
3. The 7% cumulative, convertible preferred stock was issued at the beginning of 2025 at par. Each share of preferred is convertible into two shares of common stock.
4. The average income tax rate is 20%.
5. The 500,000 shares of common stock were outstanding during the entire year.
6. Preferred dividends were not declared in 2025.
7. Net income was $1,750,000 in 2025.
8. No bonds or preferred stock were converted during 2025.

The computation of basic earnings per share for 2025 starts with the amount based upon the weighted-average number of shares outstanding, as shown in Illustration 15B.2.

ILLUSTRATION 15B.2 Computation of Earnings per Share—Simple Capital Structure

Net income	$1,750,000
Less: 7% cumulative, convertible preferred stock dividend requirements (.07 × $2,500,000)	175,000
Income applicable to common stockholders	$1,575,000
Weighted-average number of shares outstanding	500,000
Earnings per common share ($1,575,000 ÷ 500,000)	$ 3.15

Note the following points concerning this calculation.

1. When preferred stock is cumulative, the company subtracts the preferred dividend to arrive at income applicable to common stock, whether the dividend is declared or not.
2. The company must compute earnings per share of $3.15 as a starting point, because it is the per share amount that is subject to reduction due to the existence of convertible securities and options.

Diluted Earnings per Share

The steps for computing diluted earnings per share are as follows.

①	②	③
Determine, for each dilutive security, the per share effect assuming exercise/conversion.	Rank the results from Step 1 from smallest to largest earnings effect per share. That is, rank the results from most dilutive to least dilutive.	Beginning with the earnings per share based upon the weighted-average number of shares outstanding ($3.15), recalculate earnings per share by adding the smallest per share effects from Step 2.

If the results from Step 3 are less than $3.15, proceed to the next smallest per share effect and recalculate earnings per share. Continue this process so long as each recalculated earnings per share is smaller than the previous amount. The process will end either because there are no more securities to test or a particular security maintains or increases earnings per share (is antidilutive).

We'll now apply the three steps to Webster Corporation. (Note that net income and income available to common stockholders are not the same if preferred dividends are declared or cumulative.) Webster Corporation has four securities that could reduce EPS: options, 8% convertible bonds, 10% convertible bonds, and the convertible preferred stock.

The first step in the computation of diluted earnings per share is to determine a per share effect for each potentially dilutive security. **Illustrations 15B.3** through **15B.6** show these computations.

Number of shares under option	50,000
Option price per share	× $20
Proceeds upon assumed exercise of options	$1,000,000
Average 2025 market price of common	$ 30
Treasury shares that could be acquired with proceeds ($1,000,000 ÷ $30)	33,333
Excess of shares under option over treasury shares that could be repurchased (50,000 − 33,333)	16,667
Per share effect:	
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\text{None}}{\text{16,667 shares}} =$	$ 0

ILLUSTRATION 15B.3 Per Share Effect of Options (Treasury-Stock Method), Diluted Earnings per Share

Interest expense for year (.08 × $2,500,000)	$200,000
Income tax reduction due to interest (.20 × $200,000)	40,000
Interest expense avoided (net of tax)	$160,000
Number of common shares Issued assuming conversion of bonds (2,500 bonds × 40 shares)	100,000
Per share effect:	
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\$160{,}000}{\text{100,000 shares}} =$	$ 1.60

ILLUSTRATION 15B.4 Per Share Effect of 8% Bonds (If-Converted Method), Diluted Earnings per Share

ILLUSTRATION 15B.5 Per Share Effect of 10% Bonds (If-Converted Method), Diluted Earnings per Share

Interest expense for year (.10 × $2,500,000)	$250,000
Income tax reduction due to interest (.20 × $250,000)	50,000
Interest expense avoided (net of tax)	$200,000
Number of common shares Issued assuming conversion of bonds (2,500 bonds × 40 shares)	100,000
Per share effect:	
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\$200{,}000}{100{,}000 \text{ shares}} =$	$ 2.00

ILLUSTRATION 15B.6 Per Share Effect of 7% Convertible Preferred (If-Converted Method), Diluted Earnings per Share

Dividend requirement on cumulative preferred (25,000 shares × $7)	$175,000
Income tax effect (dividends not a tax deduction)	none
Dividend requirement avoided ($2,500,000 × .07)	$175,000
Number of common shares Issued assuming conversion of preferred (2 × 25,000 shares)	50,000
Per share effect:	
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\$175{,}000}{50{,}000 \text{ shares}} =$	$ 3.50

Illustration 15B.7 shows the ranking of all four potentially dilutive securities.

ILLUSTRATION 15B.7 Ranking of per Share Effects (Smallest to Largest), Diluted Earnings per Share

	Effect per Share
1. Options	$ 0
2. 8% convertible bonds	1.60
3. 10% convertible bonds	2.00
4. 7% convertible bonds	3.50

The next step is to determine earnings per share giving effect to the ranking in Illustration 15B.7. Starting with the earnings per share of $3.15 computed previously, add the incremental effects of the options to the original calculation, as shown in **Illustration 15B.8**.

ILLUSTRATION 15B.8 Recomputation of EPS Using Incremental Effect of Options

Options	
Income applicable to common stockholders	$1,575,000
Add: Incremental numerator effect of options	none
Total	$1,575,000
Weighted-average number of shares outstanding	500,000
Add: Incremental denominator effect of options (Illustration 15B.3)	16,667
Total	516,667
Recomputed earnings per share ($1,575,000 ÷ 516,667 shares)	$ 3.05

Since the recomputed earnings per share is reduced (from $3.15 to $3.05), the effect of the options is dilutive. Again, we could have anticipated this effect because the average market price ($30) exceeded the option price ($20).

Assuming that Webster converts the 8% bonds, recomputed earnings per share is as shown in **Illustration 15B.9**.

ILLUSTRATION 15B.9 Recomputation of EPS Using Incremental Effect of 8% Convertible Bonds

8% Convertible Bonds	
Numerator from previous calculation	$1,575,000
Add: Interest expense avoided (net of tax)	160,000
Total	$1,735,000
Denominator from previous calculation (shares)	516,667
Add: Number of common shares assumed issued upon conversion of bonds	100,000
Total	616,667
Recomputed earnings per share ($1,735,000 ÷ 616,667 shares)	$ 2.81

Since the recomputed earnings per share is reduced (from $3.05 to $2.81), the effect of the 8% bonds is dilutive.

Next, assuming Webster converts the 10% bonds, the company recomputes earnings per share as shown in **Illustration 15B.10**.

ILLUSTRATION 15B.10 Recomputation of EPS Using Incremental Effect of 10% Convertible Bonds

10% Convertible Bonds	
Numerator from previous calculation	$1,735,000
Add: Interest expense avoided (net of tax)	200,000
Total	$1,935,000
Denominator from previous calculation (shares)	616,667
Add: Number of common shares assumed issued upon conversion of bonds	100,000
Total	716,667
Recomputed earnings per share ($1,935,000 ÷ 716,667 shares)	$ 2.70

Since the recomputed earnings per share is reduced (from $2.81 to $2.70), the effect of the 10% convertible bonds is dilutive.

The final step is the recomputation that includes the 7% preferred stock. This is shown in **Illustration 15B.11**.

ILLUSTRATION 15B.11 Recomputation of EPS Using Incremental Effect of 7% Convertible Preferred

7% Convertible Preferred	
Numerator from previous calculation	$1,935,000
Add: Dividend requirement avoided	175,000
Total	$2,110,000
Denominator from previous calculation (shares)	716,667
Add: Number of common shares assumed issued upon conversion of preferred	50,000
Total	766,667
Recomputed earnings per share ($2,110,000 ÷ 766,667 shares)	$ 2.75

Since the recomputed earnings per share is not reduced, the effect of the 7% convertible preferred is not dilutive. Diluted earnings per share is $2.70. The per share effects of the preferred are not used in the computation.

Finally, **Illustration 15B.12** shows Webster Corporation's disclosure of earnings per share on its income statement.

ILLUSTRATION 15B.12 Basic and Diluted EPS

Net income	$1,750,000
Basic earnings per common share (Note X)	$ 3.15
Diluted earnings per common share	$ 2.70

A company uses income from continuing operations (adjusted for preferred dividends) to determine whether potential common stock is dilutive or antidilutive. Some refer to this measure as the **control number**. To illustrate, assume that Barton Company provides the information shown in **Illustration 15B.13**.

ILLUSTRATION 15B.13 Barton Company Data

Income from continuing operations	$2,400,000
Loss from discontinued operations	3,600,000
Net loss	$1,200,000
Weighted-average number of shares outstanding	1,000,000
Potential common stock	200,000

Barton reports basic and dilutive earnings per share as shown in **Illustration 15B.14**.

ILLUSTRATION 15B.14 Income Statement Presentation, EPS

Basic earnings per share	
Income from continuing operations ($2,400,000 ÷ 1,000,000)	$2.40
Loss from discontinued operations ($3,600,000 ÷ 1,000,000)	3.60
Net loss	$1.20
Diluted earnings per share	
Income from continuing operations ($2,400,000 ÷ 1,200,000)	$2.00
Loss from discontinued operations ($3,600,000 ÷ 1,200,000)	3.00
Net loss	$1.00

As Illustration 15B.14 shows, basic earnings per share from continuing operations is higher than the diluted earnings per share from continuing operations. The reason: The diluted earnings per share from continuing operations includes an additional 200,000 shares of potential common stock in its denominator.

Companies use income from continuing operations as the control number because many of them show income from continuing operations (or a similar line item above net income if it appears on the income statement) but report a final net loss due to a loss on discontinued operations. If a company uses final net loss as the control number, basic and diluted earnings per share would be the same because the potential common shares are antidilutive.[11]

Review and Practice

Key Terms Review

antidilutive securities 15-28
basic EPS 15-28
complex capital structure 15-23
*control number 15-46
convertible debt 15-3
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weighted-average number of shares outstanding 15-25

[11] If a company reports a loss from continuing operations, basic and diluted earnings per share will be the same because potential common stock will be antidilutive, even if the company reports final net income. The FASB believes that comparability of EPS information will be improved by using income from continuing operations as the control number.

Learning Objectives Review

1 Describe the accounting for the issuance, conversion, and retirement of convertible securities.

The method for **recording convertible bonds at the date of issuance follows that used to record straight debt issues**. Companies amortize any discount or premium that results from the issuance of convertible bonds, assuming the bonds will be held to maturity. If companies **convert bonds into other securities**, the principal accounting problem is to determine the amount at which to record the securities exchanged for the bonds. The book value method is considered GAAP. The **retirement of convertible debt** is considered a debt retirement, and the difference between the carrying amount of the retired convertible debt and the cash paid should result in a gain or loss.

When convertible preferred stock is converted, a company uses the book value method. It debits Preferred Stock, along with any related Paid-in Capital in Excess of Par—Preferred Stock, and credits Common Stock and Paid-in Capital in Excess of Par—Common Stock (if an excess exists).

2 Contrast the accounting for stock warrants with stock rights.

Stock warrants: Companies should allocate the proceeds from the sale of debt with detachable warrants between the two securities. Warrants that are detachable can be traded separately from the debt, and therefore companies can determine their fair value. Two methods of allocation are available: the proportional method and the incremental method. Nondetachable warrants do not require an allocation of the proceeds between the bonds and the warrants; companies record the entire proceeds as debt. **Stock rights**: No entry is required when a company issues rights to existing stockholders. The company needs only to make a memorandum entry to indicate the number of rights issued to existing stockholders and to ensure that the company has additional unissued stock registered for issuance in case the stockholders exercise the rights.

3 Describe the accounting and reporting for stock compensation plans.

Companies must use the **fair value approach** to account for stock-based compensation. Under this approach, a company computes total compensation expense based on the fair value of the options that it expects to vest on the grant date. Companies recognize compensation expense in the periods in which the employee performs the services. Restricted-stock plans follow the same general accounting principles as those for stock options. Companies estimate total compensation cost at the grant date based on the fair value of the restricted stock (or stock units); they expense that cost over the service period. If vesting does not occur, companies reverse the compensation expense.

When first proposed, there was considerable opposition to the recognition provisions contained in the fair value approach. The reason: that approach could result in substantial, previously unrecognized compensation expense. Corporate America, particularly the high-technology sector, vocally opposed the proposed standard. They believed that the standard would place them at a competitive disadvantage with larger companies that can withstand higher compensation charges. Offsetting such opposition is the need for greater transparency in financial reporting, on which our capital markets depend.

4 Compute basic earnings per share.

When a company has both common and preferred stock outstanding, it subtracts the current-year preferred stock dividend from net income to arrive at income available to common stockholders. The formula for computing earnings per share is **net income less preferred stock dividends, divided by the weighted-average common shares outstanding**.

5 Compute diluted earnings per share.

A complex capital structure requires a dual presentation of earnings per share, each with equal prominence on the face of the income statement. These two presentations are referred to as basic earnings per share and diluted earnings per share. Basic earnings per share relies on the number of weighted-average common shares outstanding (i.e., equivalent to EPS for a simple capital structure). Diluted earnings per share indicates the dilution of earnings per share that will occur if all potential issuances of common stock that would reduce earnings per share takes place. Companies with complex capital structures should exclude antidilutive securities when computing earnings per share.

*6 Explain the accounting for stock-appreciation rights plans.

The accounting for stock-appreciation rights depends on whether the rights are classified as equity-or liability-based. If equity-based, the accounting is similar to that used for stock options. If liability-based, companies remeasure compensation expense each period and allocate it over the service period using the percentage approach.

*7 Compute earnings per share in a complex situation.

For diluted EPS, make the following computations. (1) For each potentially dilutive security, determine the per share effect assuming exercise/conversion. (2) Rank the results from most dilutive to least dilutive. (3) Recalculate EPS starting with the most dilutive, and continue adding securities until EPS does not change or becomes larger.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. What is meant by a dilutive security?

2. Briefly explain why corporations issue convertible securities.

3. Discuss the similarities and the differences between convertible debt and debt issued with stock warrants.

4. Bridgewater Corp. offered holders of its 1,000 convertible bonds a premium of $160 per bond to induce conversion into shares of its common stock. Upon conversion of all the bonds, Bridgewater Corp. recorded the $160,000 premium as a reduction of paid-in capital. Comment on Bridgewater's treatment of the $160,000 "sweetener."

5. Explain how the conversion feature of convertible debt has a value (a) to the issuer and (b) to the purchaser.

6. What are the arguments for giving separate accounting recognition to the conversion feature of debentures?

7. Four years after issue, debentures with a face value of $1,000,000 and book value of $960,000 are tendered for conversion into 80,000 shares of common stock immediately after an interest payment date. At that time, the market price of the debentures is 104, and the common stock is selling at $14 per share (par value $10). The company records the conversion as follows.

Bonds Payable	1,000,000	
Discount on Bonds Payable		40,000
Common Stock		800,000
Paid-in Capital in Excess of Par—Common Stock		160,000

Discuss the propriety of this accounting treatment.

8. On July 1, 2025, Roberts Corporation issued $3,000,000 of 9% bonds payable in 20 years. The bonds include detachable warrants giving the bondholder the right to purchase for $30 one share of $1 par value common stock at any time during the next 10 years. The bonds were sold for $3,000,000. The value of the warrants at the time of issuance was $100,000. Prepare the journal entry to record this transaction.

9. What are stock rights? How does the issuing company account for them?

10. Briefly explain the accounting requirements for stock compensation plans under GAAP.

11. Cordero Corporation has an employee stock-purchase plan which permits all full-time employees to purchase 10 shares of common stock on the third anniversary of their employment and an additional 15 shares on each subsequent anniversary date. The purchase price is set at the market price on the date purchased and no commission is charged. Discuss whether this plan would be considered compensatory.

12. What date or event does the profession believe should be used in determining the value of a stock option? What arguments support this position?

13. Over what period of time should compensation cost be allocated?

14. How is compensation expense computed using the fair value approach?

15. What are the advantages of using restricted stock to compensate employees?

16. At December 31, 2025, Reid Company had 600,000 shares of common stock issued and outstanding, 400,000 of which had been issued and outstanding throughout the year and 200,000 of which were issued on October 1, 2025. Net income for 2025 was $2,000,000, and dividends declared on preferred stock were $400,000. Compute Reid's earnings per common share. (Round to the nearest penny.)

17. What effect do stock dividends or stock splits have on the computation of the weighted-average number of shares outstanding?

18. Define the following terms.

a. Basic earnings per share.

b. Potentially dilutive security.

c. Diluted earnings per share.

d. Complex capital structure.

e. Potential common stock.

19. What are the computational guidelines for determining whether a convertible security is to be reported as part of diluted earnings per share?

20. Discuss why options and warrants may be considered potentially dilutive common shares for the computation of diluted earnings per share.

21. Explain how convertible securities are determined to be potentially dilutive common shares and how those convertible securities that are not considered to be potentially dilutive common shares enter into the determination of earnings per share data.

22. Explain the treasury-stock method as it applies to options and warrants in computing dilutive earnings per share data.

23. Earnings per share can affect market prices of common stock. Can market prices affect earnings per share? Explain.

24. What is meant by the term antidilution? Give an example.

25. What type of earnings per share presentation is required in a complex capital structure?

***26.** How is antidilution determined when multiple securities are involved?

Brief Exercises

BE15.1 (LO 1) Archer Inc. issued $4,000,000 par value, 7% convertible bonds at 99 for cash. If the bonds had not included the conversion feature, they would have sold for 95. Prepare the journal entry to record the issuance of the bonds.

BE15.2 (LO 1) Petrenko Corporation has outstanding 2,000 of $1,000 bonds, each convertible into 50 shares of $10 par value common stock. The bonds are converted on December 31, 2025, when the unamortized discount is $30,000 and the market price of the stock is $21 per share. Record the conversion using the book value approach.

BE15.3 (LO 1) Pechstein Corporation issued 2,000 shares of $10 par value common stock upon conversion of 1,000 shares of $50 par value preferred stock. The preferred stock was originally issued at $60 per share. The common stock is trading at $26 per share at the time of conversion. Record the conversion of the preferred stock.

BE15.4 (LO 2) Eisler Corporation issued 2,000 $1,000 bonds at 101. Each bond was issued with one detachable stock warrant. After issuance, the bonds were selling in the market at 98, and the warrants had a market price of $40. Use the proportional method to record the issuance of the bonds and warrants.

BE15.5 (LO 2) McIntyre Corporation issued 2,000 $1,000 bonds at 101. Each bond was issued with one detachable stock warrant. After issuance, the bonds were selling separately at 98. The market price of the warrants without the bonds cannot be determined. Use the incremental method to record the issuance of the bonds and warrants.

BE15.6 (LO 3) On January 1, 2025, Barwood Corporation granted 5,000 options to executives. Each option entitles the holder to purchase one share of Barwood's $5 par value common stock at $50 per share at any time during the next 5 years. The market price of the stock is $65 per share on the date of grant. The fair value of the options at the grant date is $150,000. The period of benefit is 2 years. Prepare Barwood's journal entries for January 1, 2025, and December 31, 2025 and 2026.

BE15.7 (LO 3) Refer to the data for Barwood Corporation in BE15.6. Repeat the requirements assuming that instead of options, Barwood issued 2,000 shares of restricted stock.

BE15.8 (LO 3) Refer to the data for Barwood Corporation in BE15.6. Repeat the requirements assuming that instead of options, Barwood issued 2,000 shares of restricted stock units.

BE15.9 (LO 3) On January 1, 2025 (the date of grant), Lutz Corporation issues 2,000 shares of restricted stock to its executives. The fair value of these shares is $75,000, and their par value is $10,000. The stock is forfeited if the executives do not complete 3 years of employment with the company. Prepare the journal entry (if any) on January 1, 2025, and on December 31, 2025, assuming the service period is 3 years.

BE15.10 (LO 4) Kalin Corporation had 2025 net income of $1,000,000. During 2025, Kalin paid a dividend of $2 per share on 100,000 shares of preferred stock. During 2025, Kalin had outstanding 250,000 shares of common stock. Compute Kalin's 2025 earnings per share.

BE15.11 (LO 4) Douglas Corporation had 120,000 shares of stock outstanding on January 1, 2025. On May 1, 2025, Douglas issued 60,000 shares. On July 1, Douglas purchased 10,000 treasury shares, which were reissued on October 1. Compute Douglas's weighted-average number of shares outstanding for 2025.

BE15.12 (LO 4) Tomba Corporation had 300,000 shares of common stock outstanding on January 1, 2025. On May 1, Tomba issued 30,000 shares. (a) Compute the weighted-average number of shares outstanding if the 30,000 shares were issued for cash. (b) Compute the weighted-average number of shares outstanding if the 30,000 shares were issued in a stock dividend.

BE15.13 (LO 4) The 2025 income statement of Wasmeier Corporation showed net income of $480,000 and a loss from discontinued operations of $120,000. Wasmeier had 100,000 shares of common stock outstanding all year. Prepare Wasmeier's income statement presentation of earnings per share.

BE15.14 (LO 5) Rockland Corporation earned net income of $300,000 in 2025 and had 100,000 shares of common stock outstanding throughout the year. Also outstanding all year was $800,000 of 5% bonds, which are convertible into 16,000 shares of common. Rockland's tax rate is 20%. Compute Rockland's 2025 diluted earnings per share.

BE15.15 (LO 5) DiCenta Corporation reported net income of $270,000 in 2025 and had 50,000 shares of common stock outstanding throughout the year. Also outstanding all year were 5,000 shares of cumulative preferred stock, each convertible into 2 shares of common. The preferred stock pays an annual dividend of $5 per share. DiCenta's tax rate is 20%. Compute DiCenta's 2025 diluted earnings per share.

BE15.16 (LO 5) Bedard Corporation reported net income of $300,000 in 2025 and had 200,000 shares of common stock outstanding throughout the year. Also outstanding all year were 45,000 options to purchase common stock at $10 per share. The average market price of the stock during the year was $15. Compute diluted earnings per share.

*BE15.17 (LO 6) Ferraro, Inc. established a stock-appreciation rights (SARs) program on January 1, 2025, which entitles executives to receive cash at the date of exercise for the difference between the market price of the stock and the pre-established price of $20 on 5,000 SARs. The required service period is 2 years. The fair value of the SARs are determined to be $4 on December 31, 2025, and $9 on December 31, 2026. Compute Ferraro's compensation expense for 2025 and 2026.

Exercises

E15.1 (LO 1, 2) Excel **(Issuance and Conversion of Bonds)** For each of the unrelated transactions described below, present the entry (entries) required to record each transaction.

1. Grand Corp. issued $20,000,000 par value 10% convertible bonds at 99. If the bonds had not been convertible, the company's investment banker estimates they would have been sold at 95.
2. Hoosier Company issued $20,000,000 par value 10% bonds at 98. One detachable stock purchase warrant was issued with each $100 par value bond. At the time of issuance, the warrants were selling for $4.
3. Suppose **Sepracor, Inc.** called its convertible debt in 2025. Assume the following related to the transaction. The 11%, $10,000,000 par value bonds were converted into 1,000,000 shares of $1 par value common stock on July 1, 2025. On July 1, there was $55,000 of unamortized discount applicable to the bonds, and the company paid an additional $75,000 to the bondholders to induce conversion of all the bonds. The company records the conversion using the book value method.

E15.2 (LO 1) **(Conversion of Bonds)** Aubrey Inc. issued $4,000,000 of 10%, 10-year convertible bonds on June 1, 2025, at 98 plus accrued interest. The bonds were dated April 1, 2025, with interest payable April 1 and October 1. Bond discount is amortized semiannually on a straight-line basis.

On April 1, 2026, $1,500,000 of these bonds were converted into 30,000 shares of $20 par value common stock. Accrued interest was paid in cash at the time of conversion.

Instructions

a. Prepare the entry to record the interest expense at October 1, 2025. Assume that accrued interest payable was credited when the bonds were issued. (Round to nearest dollar.)

b. Prepare the entry(ies) to record the conversion on April 1, 2026. (Book value method is used.) Assume that the entry to record amortization of the bond discount and interest payment has been made.

E15.3 (LO 1) **(Conversion of Bonds)** Vargo Company has bonds payable outstanding in the amount of $500,000, and the Premium on Bonds Payable account has a balance of $7,500. Each $1,000 bond is convertible into 20 shares of preferred stock of par value of $50 per share. All bonds are converted into preferred stock.

Instructions

Assuming that the book value method was used, what entry would be made?

E15.4 (LO 1) **(Conversion of Bonds)** On January 1, 2024, when its $30 par value common stock was selling for $80 per share, Plato Corp. issued $10,000,000 of 8% convertible debentures due in 20 years. The conversion option allowed the holder of each $1,000 bond to convert the bond into five shares of the corporation's common stock. The debentures were issued for $10,800,000. The present value of the bond payments at the time of issuance was $8,500,000, and the corporation believes the difference between the present value and the amount paid is attributable to the conversion feature. On January 1, 2025, the corporation's $30 par value common stock was split 2 for 1, and the conversion rate for the bonds was adjusted accordingly. On January 1, 2026, when the corporation's $15 par value common stock was selling for $135 per share, holders of 30% of the convertible debentures exercised their conversion options. The corporation uses the straight-line method for amortizing any bond discounts or premiums.

Instructions

a. Prepare the journal entry to record the original issuance of the convertible debentures.

b. Prepare the journal entry to record the exercise of the conversion option, using the book value method. Show supporting computations in good form.

E15.5 (LO 1) (Conversion of Bonds) The December 31, 2025, balance sheet of Kepler Corp. is as follows.

10% callable, convertible bonds payable (semiannual interest dates April 30 and October 31; convertible into 6 shares of $25 par value common stock per $1,000 of bond principal; maturity date April 30, 2031)	$500,000	
Discount on bonds payable	10,240	$489,760

On March 5, 2026, Kepler Corp. called all of the bonds as of April 30 for the principal plus interest through April 30. By April 30, all bondholders had exercised their conversion to common stock as of the interest payment date. Consequently, on April 30, Kepler Corp. paid the semiannual interest and issued shares of common stock for the bonds. The discount is amortized on a straight-line basis. Kepler uses the book value method.

Instructions

Prepare the entry(ies) to record the interest expense and conversion on April 30, 2026. Reversing entries were made on January 1, 2026. (Round to the nearest dollar.)

E15.6 (LO 1) (Conversion of Bonds) On January 1, 2025, Gottlieb Corporation issued $4,000,000 of 10-year, 8% convertible debentures at 102. Interest is to be paid semiannually on June 30 and December 31. Each $1,000 debenture can be converted into eight shares of Gottlieb Corporation $100 par value common stock after December 31, 2026.

On January 1, 2027, $400,000 of debentures are converted into common stock, which is then selling at $110. An additional $400,000 of debentures are converted on March 31, 2027. The market price of the common stock is then $115. Accrued interest at March 31 will be paid on the next interest date.

Bond premium is amortized on a straight-line basis.

Instructions

Make the necessary journal entries for:

a. December 31, 2026.

b. January 1, 2027.

c. March 31, 2027.

d. June 30, 2027.

Record the conversions using the book value method.

E15.7 (LO 2) (Issuance of Bonds with Warrants) Illiad Inc. has decided to raise additional capital by issuing $170,000 face value of bonds with a coupon rate of 10%. In discussions with investment bankers, it was determined that to help the sale of the bonds, detachable stock warrants should be issued at the rate of one warrant for each $100 bond sold. The value of the bonds without the warrants is considered to be $136,000, and the value of the warrants in the market is $24,000. The bonds sold in the market at issuance for $152,000.

Instructions

a. What entry should be made at the time of the issuance of the bonds and warrants?

b. If the warrants were nondetachable, would the entries be different? Discuss.

E15.8 (LO 2) (Issuance of Bonds with Detachable Warrants) On September 1, 2025, Sands Company sold at 104 (plus accrued interest) 4,000 of its 9%, 10-year, $1,000 face value, nonconvertible bonds with detachable stock warrants. Each bond carried two detachable warrants. Each warrant was for one share of common stock at a specified option price of $15 per share. Shortly after issuance, the warrants were quoted on the market for $3 each. No fair value can be determined for the Sands Company bonds. Interest is payable on December 1 and June 1.

Instructions

Prepare in general journal format the entry to record the issuance of the bonds.

(AICPA adapted)

E15.9 (LO 2) (Issuance of Bonds with Stock Warrants) On May 1, 2025, Friendly Company issued 2,000 $1,000 bonds at 102. Each bond was issued with one detachable stock warrant. Shortly after issuance, the bonds were selling at 98, but the fair value of the warrants cannot be determined.

Instructions

a. Prepare the entry to record the issuance of the bonds and warrants.

b. Assume the same facts as part (a), except that the warrants had a fair value of $30. Prepare the entry to record the issuance of the bonds and warrants.

E15.10 (LO 3) (Issuance and Exercise of Stock Options) On November 1, 2025, Columbo Company adopted a stock-option plan that granted options to key executives to purchase 30,000 shares of the company's $10 par value common stock. The options were granted on January 2, 2026, and were exercisable 2 years after the date of grant if the grantee was still an employee of the company. The options expired 6 years from date of grant. The option price was set at $40, and the fair value option-pricing model determines the total compensation expense to be $450,000.

All of the options were exercised during the year 2028: 20,000 on January 3 when the market price was $67, and 10,000 on May 1 when the market price was $77 a share.

Instructions

Prepare journal entries relating to the stock option plan for the years 2026, 2027, and 2028. Assume that the employee performs services equally in 2026 and 2027.

E15.11 (LO 3) (Issuance, Exercise, and Termination of Stock Options) On January 1, 2026, Titania Inc. granted stock options to officers and key employees for the purchase of 20,000 shares of the company's $10 par common stock at $25 per share. The options were exercisable within a 5-year period beginning January 1, 2028, by grantees still in the employ of the company, and expiring December 31, 2032. The service period for this award is 2 years. Assume that the fair value option-pricing model determines total compensation expense to be $350,000.

On April 1, 2027, 2,000 options were terminated when the employees resigned from the company. The market price of the common stock was $35 per share on this date.

On March 31, 2028, 12,000 options were exercised when the market price of the common stock was $40 per share.

Instructions

Prepare journal entries to record issuance of the stock options, termination of the stock options, exercise of the stock options, and charges to compensation expense, for the years ended December 31, 2026, 2027, and 2028.

E15.12 (LO 3) (Issuance, Exercise, and Termination of Stock Options) On January 1, 2024, Nichols Corporation granted 10,000 options to key executives. Each option allows the executive to purchase one share of Nichols' $5 par value common stock at a price of $20 per share. The options were exercisable within a 2-year period beginning January 1, 2026, if the grantee is still employed by the company at the time of the exercise. On the grant date, Nichols' stock was trading at $25 per share, and a fair value option-pricing model determines total compensation to be $400,000.

On May 1, 2026, 8,000 options were exercised when the market price of Nichols' stock was $30 per share. The remaining options lapsed in 2028 because executives decided not to exercise their options.

Instructions

Prepare the necessary journal entries related to the stock option plan for the years 2024 through 2028.

E15.13 (LO 3) (Accounting for Restricted Stock) Derrick Company issues 4,000 shares of restricted stock to its CFO, Dane Yaping, on January 1, 2025. The stock has a fair value of $120,000 on this date. The service period related to this restricted stock is 4 years. Vesting occurs if Yaping stays with the company for 4 years. The par value of the stock is $5. At December 31, 2026, the fair value of the stock is $145,000.

Instructions

a. Prepare the journal entries to record the restricted stock on January 1, 2025 (the date of grant), and December 31, 2026.

b. On March 4, 2027, Yaping leaves the company. Prepare the journal entry (if any) to account for this forfeiture.

c. Prepare the journal entries on January 1, 2025, and December 31, 2026, assuming that Derrick issued 4,000 shares of restricted stock units instead of 4,000 shares of restricted stock.

d. On March 4, 2027, Yaping leaves the company. Prepare the journal entry (if any) to account for this forfeiture of restricted stock units.

E15.14 (LO 3) (Accounting for Restricted Stock) Tweedie Company issues 10,000 shares of restricted stock to its CFO, Mary Tokar, on January 1, 2025. The stock has a fair value of $500,000 on this date. The service period related to this restricted stock is 5 years. Vesting occurs if Tokar stays with the company until December 31, 2029. The par value of the stock is $10. At December 31, 2025, the fair value of the stock is $450,000.

Instructions

a. Prepare the journal entries to record the restricted stock on January 1, 2025 (the date of grant), and December 31, 2026.

b. On July 25, 2029, Tokar leaves the company. Prepare the journal entry (if any) to account for this forfeiture.

c. Prepare the journal entries on January 1, 2025, and December 31, 2026, assuming that Tweedie issued 10,000 shares of restricted stock units instead of 4,000 shares of restricted stock.

d. On July 5, 2029, Tokar leaves the company. Prepare the journal entry (if any) to account for this forfeiture of restricted stock units.

E15.15 (LO 4) Excel (Weighted-Average Number of Shares) Newton Inc. uses a calendar year for financial reporting. The company is authorized to issue 9,000,000 shares of $10 par common stock. At no time has Newton issued any potentially dilutive securities. Listed below is a summary of Newton's common stock activities.

1.	Number of common shares issued and outstanding at December 31, 2023	2,000,000
2.	Shares issued as a result of a 10% stock dividend on September 30, 2024	200,000
3.	Shares issued for cash on March 31, 2025	2,000,000
	Number of common shares issued and outstanding at December 31, 2025	4,200,000
4.	A 2-for-1 stock split of Newton's common stock took place on March 31, 2026	

Instructions

a. Compute the weighted-average number of common shares used in computing earnings per common share for 2024 on the 2025 comparative income statement.

b. Compute the weighted-average number of common shares used in computing earnings per common share for 2025 on the 2025 comparative income statement.

c. Compute the weighted-average number of common shares to be used in computing earnings per common share for 2025 on the 2026 comparative income statement.

d. Compute the weighted-average number of common shares to be used in computing earnings per common share for 2026 on the 2026 comparative income statement.

(CMA adapted)

E15.16 (LO 4) (EPS: Simple Capital Structure) On January 1, 2026, Wilke Corp. had 480,000 shares of common stock outstanding. During 2026, it had the following transactions that affected the common stock account.

February 1	Issued 120,000 shares
March 1	Issued a 10% stock dividend
May 1	Acquired 100,000 shares of treasury stock
June 1	Issued a 3-for-1 stock split
October 1	Reissued 60,000 shares of treasury stock

Instructions

a. Determine the weighted-average number of shares outstanding as of December 31, 2026.

b. Assume that Wilke Corp. earned net income of $3,456,000 during 2026. In addition, it had 100,000 shares of 9%, $100 par nonconvertible, noncumulative preferred stock outstanding for the entire year. Because of liquidity considerations, however, the company did not declare and pay a preferred dividend in 2026. Compute earnings per share for 2026, using the weighted-average number of shares determined in part (a).

c. Assume the same facts as in part (b), except that the preferred stock was cumulative. Compute earnings per share for 2026.

d. Assume the same facts as in part (b), except that net income included a loss from discontinued operations of $432,000 (net of tax). Compute earnings per share for 2026.

E15.17 (LO 4) (EPS: Simple Capital Structure) Ace Company had 200,000 shares of common stock outstanding on December 31, 2026. During the year 2027, the company issued 8,000 shares on May 1 and retired 14,000 shares on October 31. For the year 2027, Ace Company reported net income of $249,690 after a loss from discontinued operations of $40,600 (net of tax).

Instructions

What earnings per share data should be reported at the bottom of its income statement?

E15.18 (LO 4) (EPS: Simple Capital Structure) Flagstad Inc. presented the following data.

Net income	$2,500,000
Preferred stock: 50,000 shares outstanding, $100 par, 8% cumulative, not convertible	5,000,000
Common stock: Shares outstanding 1/1	750,000
Issued for cash, 5/1	300,000
Acquired treasury stock for cash, 8/1	150,000
2-for-1 stock split, 10/1	

Instructions

Compute earnings per share.

E15.19 (LO 4) (EPS: Simple Capital Structure) A portion of the combined statement of income and retained earnings of Seminole Inc. for the current year follows.

Income from continuing operations		$15,000,000
Loss from discontinued operations, net of applicable income tax (Note 1)		1,340,000
Net income		13,660,000
Retained earnings at the beginning of the year		83,250,000
		96,910,000
Dividends declared:		
On preferred stock—$6.00 per share	$ 300,000	
On common stock—$1.75 per share	14,875,000	15,175,000
Retained earnings at the end of the year		$81,735,000

Note 1. During the year, Seminole Inc. suffered a major loss from discontinued operations of $1,340,000 after applicable income tax reduction of $1,200,000.

At the end of the current year, Seminole Inc. has outstanding 8,500,000 shares of $10 par common stock and 50,000 shares of 6% preferred. On April 1 of the current year, Seminole Inc. issued 1,000,000 shares of common stock for $32 per share to help finance the loss from discontinued operations.

Instructions

Compute the earnings per share on common stock for the current year as it should be reported to stockholders.

E15.20 (LO 4) (EPS: Simple Capital Structure) On January 1, 2025, Lennon Industries had stock outstanding as follows.

6% Cumulative preferred stock, $100 par value, issued and outstanding 10,000 shares	$1,000,000
Common stock, $10 par value, issued and outstanding 200,000 shares	2,000,000

To acquire the net assets of three smaller companies, Lennon authorized the issuance of an additional 160,000 common shares. The acquisitions took place as shown below.

Date of Acquisition	Shares Issued
Company A April 1, 2025	50,000
Company B July 1, 2025	80,000
Company C October 1, 2025	30,000

On May 14, 2025, Lennon realized a $90,000 (before taxes) gain on discontinued operations. On December 31, 2025, Lennon recorded income of $300,000 from continuing operations.

Instructions

Assuming a 20% tax rate, compute the earnings per share data that should appear on the financial statements of Lennon Industries as of December 31, 2025.

E15.21 (LO 4) (EPS: Simple Capital Structure) At January 1, 2025, Langley Company's outstanding shares included the following.

280,000 shares of $50 par value, 7% cumulative preferred stock
900,000 shares of $1 par value common stock

Net income for 2025 was $2,530,000. No cash dividends were declared or paid during 2025. On February 15, 2026, however, all preferred dividends in arrears were paid, together with a 5% stock dividend on common shares. There were no dividends in arrears prior to 2025.

On April 1, 2025, 450,000 shares of common stock were sold for $10 per share, and on October 1, 2025, 110,000 shares of common stock were purchased for $20 per share and held as treasury stock.

Instructions

Compute earnings per share for 2025. Assume that financial statements for 2025 were issued in March 2026.

E15.22 (LO 5) (EPS with Convertible Bonds, Various Situations) In 2024, Chirac Enterprises issued, at par, 60 $1,000, 8% bonds, each convertible into 100 shares of common stock. Chirac had revenues of $17,500 and expenses other than interest and taxes of $8,400 for 2025. (Assume that the tax rate is 20%.) Throughout 2025, 2,000 shares of common stock were outstanding; none of the bonds was converted or redeemed.

Instructions

a. Compute diluted earnings per share for 2025.

b. Assume the same facts as those assumed for part (a), except that the 60 bonds were issued on September 1, 2025 (rather than in 2024), and none have been converted or redeemed. Compute diluted earnings per share for 2025.

c. Assume the same facts as assumed for part (a), except that 20 of the 60 bonds were actually converted on July 1, 2025. Compute diluted earnings per share for 2025.

E15.23 (LO 5) (EPS with Convertible Bonds) On June 1, 2023, Andre Company and Agassi Company merged to form Lancaster Inc. A total of 800,000 shares were issued to complete the merger. The new corporation reports on a calendar-year basis.

On April 1, 2025, the company issued an additional 400,000 shares of stock for cash. All 1,200,000 shares were outstanding on December 31, 2025.

Lancaster Inc. also issued $600,000 of 20-year, 8% convertible bonds at par on July 1, 2025. Each $1,000 bond converts to 40 shares of common at any interest date. None of the bonds have been converted to date.

Lancaster Inc. is preparing its annual report for the fiscal year ending December 31, 2025. The annual report will show earnings per share figures based upon a reported after-tax net income of $1,540,000. (The tax rate is 20%.)

Instructions

Determine the following for 2025.

a. The number of shares to be used for calculating:

1. Basic earnings per share.

2. Diluted earnings per share.

b. The earnings figures to be used for calculating:

1. Basic earnings per share.

2. Diluted earnings per share.

(CMA adapted)

E15.24 (LO 5) (EPS with Convertible Bonds and Preferred Stock) The Simon Corporation issued 10-year, $5,000,000 par, 7% callable convertible subordinated debentures on January 2, 2025. The bonds have a par value of $1,000, with interest payable annually. The current conversion ratio is 14:1, and in 2 years it will increase to 18:1. At the date of issue, the bonds were sold at 98. Bond discount is amortized on a straight-line basis. Simon's effective tax was 20%. Net income in 2025 was $9,500,000, and the company had 2,000,000 shares outstanding during the entire year.

Instructions

a. Prepare a schedule to compute both basic and diluted earnings per share.

b. Discuss how the schedule would differ if the security was convertible preferred stock.

E15.25 (LO 5) (EPS with Convertible Bonds and Preferred Stock) On January 1, 2025, Crocker Company issued 10-year, $2,000,000 face value, 6% bonds, at par. Each $1,000 bond is convertible into 15 shares of Crocker common stock. Crocker's net income in 2025 was $400,000, and its tax rate was 20%. The company had 100,000 shares of common stock outstanding throughout 2025. None of the bonds were converted in 2025.

Instructions

a. Compute diluted earnings per share for 2025.

b. Compute diluted earnings per share for 2025, assuming the same facts as in part (a) except that $1,000,000 of 6% convertible preferred stock was issued instead of the bonds. Each $100 preferred share is convertible into 5 shares of Crocker common stock.

E15.26 (LO 5) (EPS with Options, Various Situations) Venzuela Company's net income for 2025 is $50,000. The only potentially dilutive securities outstanding were 1,000 options issued during 2024, each exercisable for one share at $6. None has been exercised, and 10,000 shares of common were outstanding during 2025. The average market price of Venzuela's stock during 2025 was $20.

Instructions

a. Compute diluted earnings per share. (Round to nearest cent.)

b. Assume the same facts as those assumed for part (a), except that the 1,000 options were issued on October 1, 2025 (rather than in 2024). The average market price during the last 3 months of 2025 was $20.

E15.27 (LO 5) (EPS with Contingent Issuance Agreement) Winsor Inc. recently purchased Holiday Corp., a large midwestern home painting corporation. One of the terms of the merger was that if Holiday's income for 2025 was $110,000 or more, 10,000 additional shares would be issued to Holiday's stockholders in 2026. Holiday's income for 2024 was $120,000.

Instructions

a. Would the contingent shares have to be considered in Winsor's 2024 earnings per share computations?

b. Assume the same facts, except that the 10,000 shares are contingent on Holiday's achieving a net income of $130,000 in 2025. Would the contingent shares have to be considered in Winsor's earnings per share computations for 2024?

E15.28 (LO 5) (EPS with Warrants) Howat Corporation earned $360,000 during a period when it had an average of 100,000 shares of common stock outstanding. The common stock sold at an average market price of $15 per share during the period. Also outstanding were 15,000 warrants that could be exercised to purchase one share of common stock for $10 for each warrant exercised.

Instructions

a. Are the warrants dilutive?

b. Compute basic earnings per share.

c. Compute diluted earnings per share.

***E15.29 (LO 6) (Stock-Appreciation Rights)** On December 31, 2021, Beckford Company issues 150,000 stock-appreciation rights to its officers entitling them to receive cash for the difference between the market price of its stock and a pre-established price of $10. The fair value of the SARs is estimated to be $4 per SAR on December 31, 2022; $1 on December 31, 2023; $10 on December 31, 2024; and $9 on December 31, 2025. The service period is 4 years, and the exercise period is 7 years.

Instructions

a. Prepare a schedule that shows the amount of compensation expense allocable to each year affected by the stock-appreciation rights plan.

b. Prepare the entry at December 31, 2025, to record compensation expense, if any, in 2025.

c. Prepare the entry on December 31, 2025, assuming that all 150,000 SARs are exercised.

***E15.30 (LO 6) (Stock-Appreciation Rights)** Capulet Company establishes a stock-appreciation rights program that entitles its new president Ben Davis to receive cash for the difference between the market price of the stock and a pre-established price of $30 (also market price) on December 31, 2021, on 30,000 SARs. The date of grant is December 31, 2021, and the required employment (service) period is 4 years. President Davis exercises all of the SARs in 2027. The fair value of the SARs is estimated to be $6 per SAR on December 31, 2022; $9 on December 31, 2023; $15 on December 31, 2024; $6 on December 31, 2025; and $18 on December 31, 2026.

Instructions

a. Prepare a 5-year (2022–2026) schedule of compensation expense pertaining to the 30,000 SARs granted president Davis.

b. Prepare the journal entry for compensation expense in 2022, 2025, and 2026 relative to the 30,000 SARs.

Problems

P15.1 (LO 1, 2, 3) Groupwork (Entries for Various Dilutive Securities) The stockholders' equity section of Martino Inc. at the beginning of the current year appears below.

Common stock, $10 par value, authorized 1,000,000 shares, 300,000 shares issued and outstanding	$3,000,000
Paid-in capital in excess of par—common stock	600,000
Retained earnings	570,000

During the current year, the following transactions occurred.

1. The company issued to the stockholders 100,000 rights. Ten rights are needed to buy one share of stock at $32. The rights were void after 30 days. The market price of the stock at this time was $34 per share.
2. The company sold to the public a $200,000, 10% bond issue at 104. The company also issued with each $100 bond one detachable stock purchase warrant, which provided for the purchase of common stock at $30 per share. Shortly after issuance, similar bonds without warrants were selling at 96 and the warrants at $8.
3. All but 5,000 of the rights issued in (1) were exercised in 30 days.
4. At the end of the year, 80% of the warrants in (2) had been exercised, and the remaining were outstanding and in good standing.
5. During the current year, the company granted stock options for 10,000 shares of common stock to company executives. The company, using a fair value option-pricing model, determines that each option is worth $10. The option price is $30. The options were to expire at year-end and were considered compensation for the current year.
6. All but 1,000 shares related to the stock-option plan were exercised by year-end. The expiration resulted because one of the executives failed to fulfill an obligation related to the employment contract.

Instructions

a. Prepare general journal entries for the current year to record the transactions listed above.

b. Prepare the stockholders' equity section of the balance sheet at the end of the current year. Assume that retained earnings at the end of the current year is $750,000.

P15.2 (LO 1) Excel (Entries for Conversion, Amortization, and Interest of Bonds) Volker Inc. issued $2,500,000 of convertible 10-year bonds on July 1, 2025. The bonds provide for 12% interest payable semiannually on January 1 and July 1. The discount in connection with the issue was $54,000, which is being amortized monthly on a straight-line basis.

The bonds are convertible after one year into 8 shares of Volker Inc.'s $100 par value common stock for each $1,000 of bonds.

On August 1, 2026, $250,000 of bonds were turned in for conversion into common stock. Interest has been accrued monthly and paid as due. At the time of conversion, any accrued interest on bonds being converted is paid in cash.

Instructions

Prepare the journal entries to record the conversion, amortization, and interest in connection with the bonds as of the following dates. (Round to the nearest dollar.)

a. August 1, 2026. (Assume the book value method is used.)

b. August 31, 2026.

c. December 31, 2026, including closing entries for end-of-year.

(AICPA adapted)

P15.3 (LO 3) Excel (Stock-Option Plan) Berg Company adopted a stock-option plan on November 30, 2024, that provided that 70,000 shares of $5 par value stock be designated as available for the granting of options to officers of the corporation at a price of $9 a share. The market price was $12 a share on November 30, 2025.

On January 2, 2025, options to purchase 28,000 shares were granted to president Tom Winter—15,000 for services to be rendered in 2025 and 13,000 for services to be rendered in 2026. Also on that date, options to purchase 14,000 shares were granted to vice president Michelle Bennett—7,000 for services

to be rendered in 2025 and 7,000 for services to be rendered in 2026. The market price of the stock was $14 a share on January 2, 2025. The options were exercisable for a period of one year following the year in which the services were rendered. The fair value of the options on the grant date was $4 per option.

In 2026, neither the president nor the vice president exercised their options because the market price of the stock was below the exercise price. The market price of the stock was $8 a share on December 31, 2026, when the options for 2025 services lapsed.

On December 31, 2027, both president Winter and vice president Bennett exercised their options for 13,000 and 7,000 shares, respectively, when the market price was $16 a share.

Instructions

Prepare the necessary journal entries in 2024 when the stock-option plan was adopted, in 2025 when options were granted, in 2026 when options lapsed, and in 2027 when options were exercised.

P15.4 (LO 3) (Stock-Based Compensation) Assume that **Amazon.com** has a stock-option plan for top management. Each stock option represents the right to purchase a share of Amazon $1 par value common stock in the future at a price equal to the fair value of the stock at the date of the grant. Amazon has 5,000 stock options outstanding, which were granted at the beginning of 2025. The following data relate to the option grant.

Exercise price for options	$40
Market price at grant date (January 1, 2025)	$40
Fair value of options at grant date (January 1, 2025)	$ 6
Service period	5 years

Instructions

a. Prepare the journal entry (entries) for the first year of the stock-option plan.

b. Prepare the journal entry (entries) for the first year of the plan assuming that, rather than options, 700 shares of restricted stock were granted at the beginning of 2025.

c. Prepare the journal entry (entries) for the first year of the plan, assuming that 700 shares of restricted stock units were granted at the beginning of 2025 rather than options.

d. Now assume that the market price of Amazon stock on the grant date was $45 per share. Repeat the requirements for (a), (b), and (c).

e. Amazon would like to implement an employee stock-purchase plan for rank-and-file employees, but it would like to avoid recording expense related to this plan. Which of the following provisions must be in place for the plan to avoid recording compensation expense?

1. Substantially all employees may participate.

2. The discount from market is small (less than 5%).

3. The plan offers no substantive option feature.

4. There is no preferred stock outstanding.

***P15.5 (LO 5, 7) Groupwork (EPS with Complex Capital Structure)** Amy Dyken, controller at Fitzgerald Pharmaceutical Industries, a public company, is currently preparing the calculation for basic and diluted earnings per share and the related disclosure for Fitzgerald's financial statements. Below is selected financial information for the fiscal year ended June 30, 2025.

Fitzgerald Pharmaceutical Industries
Selected Balance Sheet Information
June 30, 2025

Long-term debt	
Notes payable, 10%	$ 1,000,000
8% convertible bonds payable	5,000,000
10% bonds payable	6,000,000
Total long-term debt	$12,000,000
Shareholders' equity	
Preferred stock, 6% cumulative, $50 par value, 100,000 shares authorized, 25,000 shares issued and outstanding	$ 1,250,000
Common stock, $1 par, 10,000,000 shares authorized, 1,000,000 shares issued and outstanding	1,000,000
Additional paid-in capital	4,000,000
Retained earnings	6,000,000
Total shareholders' equity	$12,250,000

The following transactions have also occurred at Fitzgerald.

1. Options were granted on July 1, 2024, to purchase 200,000 shares at $15 per share. Although no options were exercised during fiscal year 2025, the average price per common share during fiscal year 2025 was $20 per share.
2. Each bond was issued at face value. The 8% convertible bonds will convert into common stock at 50 shares per $1,000 bond. The bonds are exercisable after 5 years and were issued in fiscal year 2024.
3. The preferred stock was issued in 2024.
4. There are no preferred dividends in arrears; however, preferred dividends were not declared in fiscal year 2025.
5. The 1,000,000 shares of common stock were outstanding for the entire 2025 fiscal year.
6. Net income for fiscal year 2025 was $1,500,000, and the average income tax rate is 20%.

Instructions

For the fiscal year ended June 30, 2025, calculate the following for Fitzgerald Pharmaceutical Industries.

a. Basic earnings per share.

b. Diluted earnings per share.

P15.6 (LO 4) (Basic EPS: Two-Year Presentation) Melton Corporation is preparing the comparative financial statements for the annual report to its shareholders for fiscal years ended May 31, 2025, and May 31, 2026. The income from operations for the fiscal year ended May 31, 2025, was $1,800,000 and income from continuing operations for the fiscal year ended May 31, 2026, was $2,500,000. In both years, the company incurred a 10% interest expense on $2,400,000 of debt, an obligation that requires interest-only payments for 5 years. The company experienced a loss from discontinued operations of $600,000 in February 2026. The company uses a 20% effective tax rate for income taxes.

The capital structure of Melton Corporation on June 1, 2024, consisted of 1 million shares of common stock outstanding and 20,000 shares of $50 par value, 6%, cumulative preferred stock. There were no preferred dividends in arrears, and the company had not issued any convertible securities, options, or warrants.

On October 1, 2024, Melton sold an additional 500,000 shares of the common stock at $20 per share. Melton distributed a 20% stock dividend on the common shares outstanding on January 1, 2025. On December 1, 2025, Melton was able to sell an additional 800,000 shares of the common stock at $22 per share. These were the only common stock transactions that occurred during the 2 fiscal years.

Instructions

a. Identify whether the capital structure at Melton Corporation is a simple or complex capital structure, and explain why.

b. Determine the weighted-average number of shares that Melton Corporation would use in calculating earnings per share for the fiscal year ended:

1. May 31, 2025.
2. May 31, 2026.

c. Prepare, in good form, a comparative income statement, beginning with income from operations, for Melton Corporation for the fiscal years ended May 31, 2025, and May 31, 2026. This statement will be included in Melton's annual report and should display the appropriate earnings per share presentations.

(CMA adapted)

P15.7 (LO 4, 5) Groupwork (Computation of Basic and Diluted EPS) Charles Austin of the controller's office of Thompson Corporation was given the assignment of determining the basic and diluted earnings per share values for the year ending December 31, 2026. Austin has compiled the information listed below.

1. The company is authorized to issue 8,000,000 shares of $10 par value common stock. As of December 31, 2025, 2,000,000 shares had been issued and were outstanding.
2. The per share market prices of the common stock on selected dates were as follows.

	Price per Share
July 1, 2025	$20.00
January 1, 2026	21.00
April 1, 2026	25.00
July 1, 2026	11.00
August 1, 2026	10.50
November 1, 2026	9.00
December 31, 2026	10.00

3. A total of 700,000 shares of an authorized 1,200,000 shares of convertible preferred stock had been issued on July 1, 2025. The stock was issued at its par value of $25, and it has a cumulative dividend of $3 per share. The stock is convertible into common stock at the rate of one share of convertible preferred for one share of common. The rate of conversion is to be automatically adjusted for stock splits and stock dividends. Dividends are paid quarterly on September 30, December 31, March 31, and June 30.
4. Thompson Corporation is subject to a 20% income tax rate.
5. The after-tax net income for the year ended December 31, 2026, was $11,550,000.

The following specific activities took place during 2026.

1. January 1: A 5% common stock dividend was issued. The dividend had been declared on December 1, 2025, to all stockholders of record on December 29, 2025.
2. April 1: A total of 400,000 shares of the $3 convertible preferred stock was converted into common stock. The company issued new common stock and retired the preferred stock. This was the only conversion of the preferred stock during 2026.
3. July 1: A 2-for-1 split of the common stock became effective on this date. The board of directors had authorized the split on June 1.
4. August 1: A total of 300,000 shares of common stock were issued to acquire a factory building.
5. November 1: A total of 24,000 shares of common stock were purchased on the open market at $9 per share. These shares were to be held as treasury stock and were still in the treasury as of December 31, 2026.
6. Common stock cash dividends: Cash dividends to common stockholders were declared and paid as follows.

April 15—$0.30 per share
October 15—$0.20 per share

7. Preferred stock cash dividends: Cash dividends to preferred stockholders were declared and paid as scheduled.

Instructions

a. Determine the number of shares used to compute basic earnings per share for the year ended December 31, 2026.

b. Determine the number of shares used to compute diluted earnings per share for the year ended December 31, 2026.

c. Compute the adjusted net income to be used as the numerator in the basic earnings per share calculation for the year ended December 31, 2026.

***P15.8 (LO 5, 7) (Computation of Basic and Diluted EPS)** The information below pertains to Barkley Company for 2026.

Net income for the year	$1,200,000
7% convertible bonds issued at par ($1,000 per bond); each bond is convertible into 30 shares of common stock	2,000,000
6% convertible, cumulative preferred stock, $100 par value; each share is convertible into 3 shares of common stock	4,000,000
Common stock, $10 par value	6,000,000
Tax rate for 2026	20%
Average market price of common stock	$25 per share

There were no changes during 2026 in the number of common shares, preferred shares, or convertible bonds outstanding. There is no treasury stock. The company also has common stock options (granted in a prior year) to purchase 75,000 shares of common stock at $20 per share.

Instructions

a. Compute basic earnings per share for 2026.

b. Compute diluted earnings per share for 2026.

P15.9 (LO 4) (EPS with Stock Dividend and Discontinued Operations) Christina Corporation is preparing the comparative financial statements to be included in the annual report to stockholders. Christina employs a fiscal year ending May 31.

Income from operations before income taxes for Christina was $1,400,000 and $660,000, respectively, for fiscal years ended May 31, 2026 and 2025. Christina experienced a loss from discontinued operations of $400,000 on March 3, 2026. A 20% combined income tax rate pertains to any and all of Christina Corporation's profits, gains, and losses.

Christina's capital structure consists of preferred stock and common stock. The company has not issued any convertible securities or warrants and there are no outstanding stock options.

Christina issued 40,000 shares of $100 par value, 6% cumulative preferred stock in 2022. All of this stock is outstanding, and no preferred dividends are in arrears.

There were 1,000,000 shares of $1 par common stock outstanding on June 1, 2024. On September 1, 2024, Christina sold an additional 400,000 shares of the common stock at $17 per share. Christina distributed a 20% stock dividend on the common shares outstanding on December 1, 2025. These were the only common stock transactions during the past 2 fiscal years.

Instructions

a. Determine the weighted-average number of common shares that would be used in computing earnings per share on the current comparative income statement for:

1. The year ended May 31, 2025.

2. The year ended May 31, 2026.

b. Starting with income from operations before income taxes, prepare a comparative income statement for the years ended May 31, 2026 and 2025. The statement will be part of Christina Corporation's annual report to stockholders and should include appropriate earnings per share presentation.

c. The capital structure of a corporation is the result of its past financing decisions. Furthermore, the earnings per share data presented on a corporation's financial statements is dependent upon the capital structure.

1. Explain why Christina Corporation is considered to have a simple capital structure.

2. Describe how earnings per share data would be presented for a corporation that has a complex capital structure.

(CMA adapted)

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ15.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and accompanying notes to answer the following questions.

a. Under P&G's stock-based compensation plan, stock options are granted annually to key managers and directors.

1. How many options were granted during 2020 under the plan?

2. How many options were exercisable at June 30, 2020?

3. How many options were exercised in 2020, and what was the average price of those exercised?

4. What is the total stock-based compensation expense for stock options and the total compensation expense for restricted stock, restricted stock units (RSUs), and performance stock units (PSUs) for 2020, 2019, and 2018?

5. To what accounts are the proceeds from these option exercises credited?

6. What was the number of outstanding options at June 30, 2020, and at what average exercise price?

b. What number of diluted weighted-average common shares outstanding was used by P&G in computing earnings per share for 2020, 2019, and 2018? What was P&G's diluted earnings per share in 2020, 2019, and 2018?

c. What other stock-based compensation plans does P&G have?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ15.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What employee stock-option compensation plans are offered by Coca-Cola and PepsiCo?

b. How many options are outstanding at year-end 2020 for both Coca-Cola and PepsiCo?

c. How many options were granted by Coca-Cola and PepsiCo to officers and employees during 2020?

d. How many options were exercised during 2020?

e. What was the average exercise price for Coca-Cola and PepsiCo employees at December 31, 2020?

f. What was the diluted net income per share for Coca-Cola and PepsiCo for 2020, 2019, and 2018?

Financial Statement Analysis Case: Ragatz, Inc.

UYJ15.3 Ragatz, Inc., a drug company, reported the following information. The company prepares its financial statements in accordance with GAAP.

(in thousands)	2025
Current liabilities	$ 554,114
Convertible subordinated debt	648,020
Total liabilities	1,228,313
Stockholders' equity	176,413
Net income	58,333

Analysts attempting to compare Ragatz to drug companies that issue debt with detachable warrants may face a challenge due to differences in accounting for convertible debt.

Instructions

a. Compute the following ratios for Ragatz, Inc. (Assume that year-end balances approximate annual averages.)

1. Return on assets.

2. Return on common stock equity.

3. Debt to assets ratio.

b. Briefly discuss the operating performance and financial position of Ragatz. Industry averages for these ratios in 2025 were ROA 3.5%, return on equity 16%, and debt to assets 75%. Based on this analysis, would you make an investment in the company's 5% convertible bonds? Explain.

c. Assume you want to compare Ragatz to an IFRS company like **Merck** (IFRS requires companies to split the debt proceeds between debt and equity components). Assuming that the fair value of the equity component of Ragatz's convertible bonds is $150,000, how would you adjust the analysis above to make valid comparisons between Ragatz and Merck?

Accounting, Analysis, and Principles

UYJ15.4 On January 1, 2024, Garner issued 10-year, $200,000 face value, 6% bonds at par. Each $1,000 bond is convertible into 30 shares of Garner $2 par value common stock. The company has had 10,000 shares of common stock (and no preferred stock) outstanding throughout its life. None of the bonds have been converted as of the end of 2025. (Ignore all tax effects.)

Accounting

a. Prepare the journal entry Garner would have made on January 1, 2024, to record the issuance of the bonds.

b. Garner's net income in 2025 was $30,000 and was $27,000 in 2024. Compute basic and diluted earnings per share for Garner for 2025 and 2024.

c. Assume that 75% of the holders of Garner's convertible bonds convert their bonds to stock on June 30, 2026, when Garner's stock is trading at $32 per share. Garner pays $50 per bond to induce bondholders to convert. Prepare the journal entry to record the conversion.

Analysis

Show how Garner will report income and EPS for 2025 and 2024. Briefly discuss the importance of GAAP for EPS to analysts evaluating companies based on price-earnings ratios. Consider comparisons for a company over time, as well as comparisons between companies at a point in time.

Principles

In order to converge GAAP and IFRS, the FASB is considering whether the equity element of a convertible bond should be reported as equity. Describe how the journal entry you made in part (a) above would differ under IFRS. In terms of the accounting principles discussed in Chapter 1, what does IFRS for convertible debt accomplish that GAAP potentially sacrifices? What does GAAP for convertible debt accomplish that IFRS potentially sacrifices?

Developing Your Professional Skills

Critical-Thinking Cases

CT15.1 (LO 2) (Warrants Issued with Bonds and Convertible Bonds) Incurring long-term debt with an arrangement whereby lenders receive an option to buy common stock during all or a portion of the time the debt is outstanding is a frequent corporate financing practice. In some situations, the result is achieved through the issuance of convertible bonds; in others, the debt instruments and the warrants to buy stock are separate.

Instructions

a. **1.** Describe the differences that exist in current accounting for original proceeds of the issuance of convertible bonds and of debt instruments with separate warrants to purchase common stock.

2. Discuss the underlying rationale for the differences described in (a)(1) above.

3. Summarize the arguments that have been presented in favor of accounting for convertible bonds in the same manner as accounting for debt with separate warrants.

b. At the start of the year, Huish Company issued $18,000,000 of 12% bonds along with detachable warrants to buy 1,200,000 shares of its $10 par value common stock at $18 per share. The bonds mature over the next 10 years, starting one year from date of issuance, with annual maturities of $1,800,000. At the time, Huish had 9,600,000 shares of common stock outstanding. The company received $20,040,000 for the bonds and the warrants. For Huish Company, 12% was a relatively low borrowing rate. If offered alone, at this time, the bonds would have sold in the market at a 22% discount. Prepare the journal entry (or entries) for the issuance of the bonds and warrants for the cash consideration received.

(AICPA adapted)

CT15.2 (LO 3) Ethics (Ethical Issues—Compensation Plan) The executive officers of Rouse Corporation have a performance-based compensation plan. The performance criteria of this plan is linked to growth in earnings per share. When annual EPS growth is 12%, the Rouse executives earn 100% of the shares; if growth is 16%, they earn 125%. If EPS growth is lower than 8%, the executives receive no additional compensation.

In 2020, Joan Devers, the controller of Rouse, reviews year-end estimates of bad debt expense and warranty expense. She calculates the EPS growth at 15%. Kurt Adkins, a member of the executive group, remarks over lunch one day that the estimate of bad debt expense might be decreased, increasing EPS growth to 16.1%. Devers is not sure she should do this because she believes that the current estimate of bad debts is sound. On the other hand, she recognizes that a great deal of subjectivity is involved in the computation.

Instructions

Answer the following questions.

a. What, if any, is the ethical dilemma for Devers?

b. Should Devers's knowledge of the compensation plan be a factor that influences her estimate?

c. How should Devers respond to Adkins's request?

CT15.3 (LO 2, 3) Writing (Stock Warrants—Various Types) For various reasons a corporation may issue warrants to purchase shares of its common stock at specified prices that, depending on the circumstances, may be less than, equal to, or greater than the current market price. For example, warrants may be issued:

1. To existing stockholders on a pro rata basis.

2. To certain key employees under an incentive stock-option plan.

3. To purchasers of the corporation's bonds.

Instructions

For each of the three examples of how stock warrants are used:

a. Explain why they are used.

b. Discuss the significance of the price (or prices) at which the warrants are issued (or granted) in relation to (1) the current market price of the company's stock, and (2) the length of time over which they can be exercised.

c. Describe the information that should be disclosed in financial statements, or notes thereto, that are prepared when stock warrants are outstanding in the hands of the three groups listed above.

(AICPA adapted)

CT15.4 (LO 3) Writing (Stock Compensation Plans) The following two items appeared on the Internet concerning the GAAP requirement to expense stock options.

WASHINGTON, D.C.—February 17, 2005 Congressman David Dreier (R–CA), Chairman of the House Rules Committee, and Congresswoman Anna Eshoo (D–CA) reintroduced legislation today that will preserve broad-based employee stock option plans and give investors critical information they need to understand how employee stock options impact the value of their shares.

"Last year, the U.S. House of Representatives overwhelmingly voted for legislation that would have ensured the continued ability of innovative companies to offer stock options to rank-and-file employees," Dreier stated. "Both the Financial Accounting Standards Board (FASB) and the Securities and Exchange Commission (SEC) continue to ignore our calls to address legitimate concerns about the impact of FASB's new standard on workers' ability to have an ownership stake in the New Economy, and its failure to address the real need of shareholders: accurate and meaningful information about a company's use of stock options."

"In December 2004, FASB issued a stock option expensing standard that will render a huge blow to the 21st century economy," Dreier said. "Their action and the SEC's apparent lack of concern for protecting shareholders, requires us to once again take a firm stand on the side of investors and economic growth. Giving investors the ability to understand how stock options impact the value of their shares is critical. And equally important is preserving the ability of companies to use this innovative tool to attract talented employees."

"Here We Go Again!" by Jack Ciesielski (2/21/2005, *http://www.accountingobserver.com/blog/2005/02/here-we-go-again*) On February 17, Congressman David Dreier (R–CA), and Congresswoman Anna Eshoo (D–CA), officially entered Silicon Valley's bid to gum up the launch of honest reporting of stock option compensation: They co-sponsored a bill to "preserve broad-based employee stock option plans and give investors critical information they need to understand how employee stock options impact the value of their shares." You know what "critical information" they mean: stuff like the stock compensation for the top five officers in a company, with a rigged value set as close to zero as possible. Investors *crave* this kind of information. Other ways the good Congresspersons want to "help" investors: The bill "also requires the SEC to study the effectiveness of those disclosures over three years, during which time, no new accounting standard related to the treatment of stock options could be recognized. Finally, the bill requires the Secretary of Commerce to conduct a study and report to Congress on the impact of broad-based employee stock option plans on expanding employee corporate ownership, skilled worker recruitment and retention, research and innovation, economic growth, and international competitiveness."

It's the old "four corners" basketball strategy: stall, stall, stall. In the meantime, hope for regime change at your opponent, the FASB.

Instructions

a. What are the major recommendations of the stock-based compensation pronouncement?

b. How do the provisions of GAAP in this area differ from the bill introduced by members of Congress (Dreier and Eshoo), which would require expensing for options issued to only the top five officers in a company? Which approach do you think would result in more useful information? (Focus on comparability.)

c. The bill in Congress urges the FASB to develop a rule that preserves "the ability of companies to use this innovative tool to attract talented employees." Write a response to these Congress-people explaining the importance of neutrality in financial accounting and reporting.

CT15.5 (LO 4, 5) (EPS: Preferred Dividends, Options, and Convertible Debt) "Earnings per share" (EPS) is the most featured, single financial statistic about modern corporations. Daily published quotations of stock prices have recently been expanded to include for many securities a "times earnings" figure that is based on EPS. Stock analysts often focus their discussions on the EPS of the corporations they study.

Instructions

a. Explain how dividends or dividend requirements on any class of preferred stock that may be outstanding affect the computation of EPS.

b. One of the technical procedures applicable in EPS computations is the "treasury-stock method." Briefly describe the circumstances under which it might be appropriate to apply the treasury-stock method.

c. Convertible debentures are considered potentially dilutive common shares. Explain how convertible debentures are handled for purposes of EPS computations.

(AICPA adapted)

CT15.6 (LO 4, 5) Writing (EPS, Antidilution) Brad Dolan, a stockholder of Rhode Corporation, has asked you, the firm's accountant, to explain why his stock warrants were not included in diluted EPS. In order to explain this situation, you must briefly explain what dilutive securities are, why they are included in the EPS calculation, and why some securities are antidilutive and thus not included in this calculation.

Rhode Corporation earned $228,000 during the period, when it had an average of 100,000 shares of common stock outstanding. The common stock sold at an average market price of $25 per share during the period. Also outstanding were 30,000 warrants that could be exercised to purchase one share of common stock at $30 per warrant.

Instructions

Write Mr. Dolan a 1–1.5-page letter explaining why the warrants are not included in the calculation.

FASB Codification References

[1] FASB ASC 470-20-25-1 to 2. [Predecessor literature: "Accounting for Convertible Debt and Debt Issued with Stock Purchase Warrants," *Opinions of the Accounting Principles Board No. 14* (New York, NY: AICPA, 1973).]

[2] FASB ASC 718-10-10. [Predecessor literature: "Accounting for Stock-Based Compensation," *Statement of Financial Accounting Standards No. 123* (Norwalk, Conn.: FASB, 1995); and "Share-Based Payment," *Statement of Financial Accounting Standard No. 123(R)* (Norwalk, Conn.: FASB, 2004).]

[3] FASB ASC 260-10-45-2. [Predecessor literature: "Earnings per Share," *Statement of Financial Accounting Standards No. 128* (Norwalk, Conn.: FASB, 1997).]

[4] FASB ASC 260-10-50. [Predecessor literature: "Earnings per Share," *Statement of Financial Accounting Standards No. 128*, (Norwalk, Conn.: FASB, 1997.)]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE15.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of "basic earnings per share"?

b. What is "dilution"?

c. What is a "warrant"?

d. What is a "grant date"?

CE15.2 For how many periods must a company present EPS data?

CE15.3 For each period that an income statement is presented, what must a company disclose about its EPS?

CE15.4 If a company's outstanding shares are increased through a stock dividend or a stock split, how would that alter the presentation of its EPS data?

Codification Research Case

Richardson Company is contemplating the establishment of a share-based compensation plan to provide long-run incentives for its top management. However, members of the compensation committee of the board of directors have voiced some concerns about adopting these plans, based on news accounts related to a recent accounting standard in this area. They would like you to conduct some research on this recent standard so they can be better informed about the accounting for these plans.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Identify the authoritative literature that addresses the accounting for share-based payment compensation plans.

b. Briefly discuss the objectives for the accounting for stock compensation. What is the role of fair value measurement?

c. The Richardson Company board is also considering an employee share-purchase plan, but the Board does not want to record expense related to the plan. What criteria must be met to avoid recording expense on an employee stock-purchase plan?

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

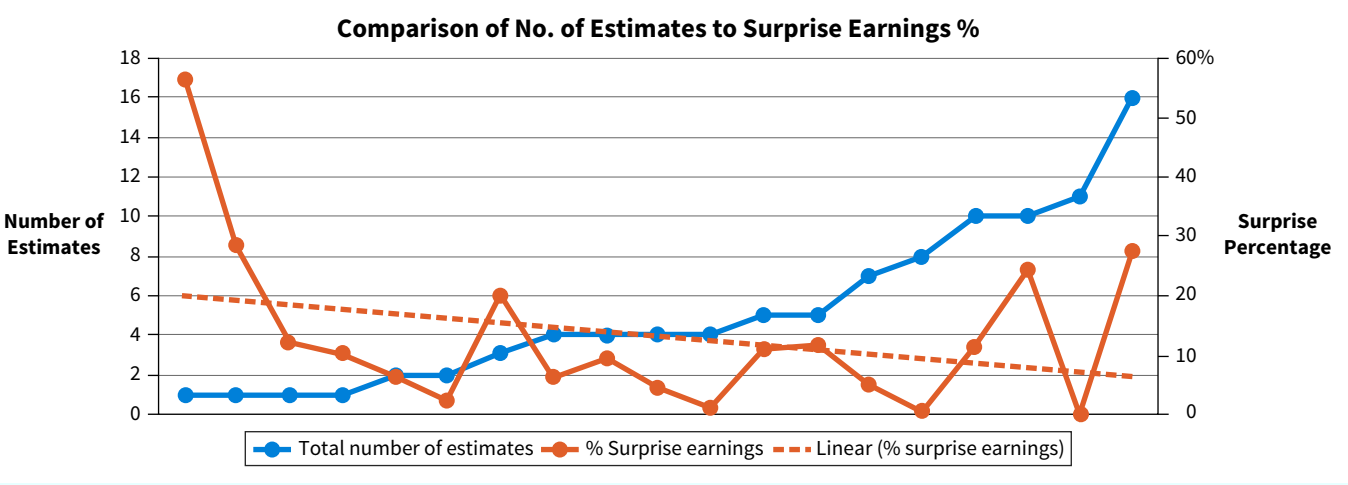
Analytics in Action Activities

Using Data Analytics to Evaluate Earnings Forecasts

Excel

DA15.1 Earnings per share (EPS) is one of the most highly visible standards of measurement for assessing management stewardship and predicating a company's future value. Given the relevant nature of this metric, any reliable predictions, or forecasts, of future EPS for a particular company would be valuable for investors.

The **Nasdaq** maintains an earnings calendar on its website and includes forecasted EPS. The forecast is derived from a consensus by all analysts who made earnings predictions; it could be one analyst or several. How reliable are these predictions? Does a forecast that incorporates estimates from several analysts lead to a more reliable prediction of EPS? We can use visualizations such as the following to understand any correlations between the number of analyst estimates and the quality of the forecast.



Required

Taking on the role of a data analyst for a financial advisor, you are provided with raw EPS data, including forecasted and actual results, for a variety of companies. Using Excel, you will organize the data into a pivot table and create different charts to help understand and analyze the results.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 8

Compare the accounting for dilutive securities and earnings per share under GAAP and IFRS.

The primary IFRS related to financial instruments, including dilutive securities, is *IAS 39,* "Financial Instruments: Recognition and Measurement." The accounting for various forms of stock-based compensation under IFRS is found in *IFRS 2*, "Share-Based Payment." This standard was amended, resulting in significant convergence between IFRS and GAAP in this area. The IFRS addressing accounting and reporting for earnings per share computations is *IAS 33,* "Earnings per Share." Following are the key similarities and differences between GAAP and IFRS related to dilutive securities and earnings per share.

Similarities

- IFRS and GAAP follow the same model for recognizing stock-based compensation: The fair value of shares and options awarded to employees is recognized over the period to which the employees' services relate.
- Although the calculation of basic and diluted earnings per share is similar between IFRS and GAAP, the Boards have worked to resolve the few minor differences in EPS reporting. One proposal in the FASB project concerns contracts that can be settled in either cash or shares. IFRS requires that share settlement must be used, while GAAP gives companies a choice. If the FASB adopts the IFRS approach, GAAP and IFRS would be converged in this regard.

Differences

- A significant difference between IFRS and GAAP is the accounting for securities with characteristics of debt and equity, such as convertible debt. Under GAAP, all of the proceeds of convertible debt are recorded as long-term debt. Under IFRS, convertible bonds are "bifurcated"—separated into the equity component (the value of the conversion option) of the bond issue and the debt component.
- Related to employee share-purchase plans, under IFRS, all employee share-purchase plans are deemed to be compensatory; that is, compensation expense is recorded for the amount of the discount. Under GAAP, these plans are often considered noncompensatory and therefore no compensation is recorded. Certain conditions must exist before a plan can be considered noncompensatory—the most important being that the discount generally cannot exceed 5%.
- Modification of a share option results in the recognition of any incremental fair value under both IFRS and GAAP. However, if the modification leads to a reduction, IFRS does not permit the reduction but GAAP does.
- Other EPS differences relate to (1) the treasury-stock method and how the proceeds from extinguishment of a liability should be accounted for, and (2) how to compute the weighted average of contingently issuable shares.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 16

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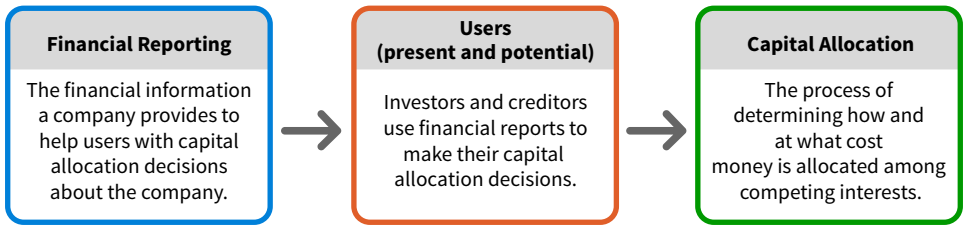
Investments

WHAT are the major types of securities purchased by companies?

The major types of securities held as investments are bonds, stock, and derivatives. Short-term debt investments include such items as commercial paper, money market funds, certificates of deposit (CDs), and Treasury bills. Long-term debt investments are typically asset-backed securities and commercial or municipal bond investments. Equity securities include common and preferred stock. Derivatives include forwards, futures, options, and swaps.

WHY is information about investments in securities important?

An effective process of capital allocation is critical to a healthy economy. It promotes productivity, encourages innovation, and provides an efficient and liquid market for buying and selling securities and obtaining and granting credit. Unreliable and irrelevant financial information leads to poor capital allocation, which adversely affects the securities markets. As summarized in the following chart (repeated from Chapter 1), relevant and reliable information on investment securities makes markets more efficient to help those with resources to provide funds to those who need investment capital.


Financial Reporting
The financial information a company provides to help users with capital allocation decisions about the company.
Users (present and potential)
Investors and creditors use financial reports to make their capital allocation decisions.
Capital Allocation
The process of determining how and at what cost money is allocated among competing interests.

Microsoft
Balance Sheet
June 30, 2021
(in millions)

Assets		
Current assets:		
Cash and cash equivalents	$ 14,224	
Short-term investments	**116,110**	
Total cash, cash equivalents, and short-term investments	130,334	
Accounts receivable, net	38,043	
Inventories	2,636	
Other current assets	13,393	
Total current assets		$184,406
Property and equipment, net		59,715
Operating lease right-of-use assets		11,088
Equity investments		**5,984**
Goodwill		49,711
Intangible assets, net		7,800
Other long-term assets		15,075
Total assets		$333,779

Debt and equity investments are used to grow businesses and provide funds for investments in property, plant, and equipment and research and development. A classic example is **Microsoft**. As shown in a recent balance sheet, short-term investments and equity investments comprise 36.6% of its total assets.

HOW do we account for investments in securities?

Investments in securities are reported differently depending on the security involved. Debt investments are classified into three categories: held-to-maturity, available-for-sale, and trading. Each of these debt securities have different reporting approaches, such as amortized cost and fair value. The accounting for equity investments depends on the level of ownership a company has in another company. The three classifications for equity securities are fair value, equity method, and consolidation.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 16.1 Describe the accounting for investments in debt securities.	**16.1 Investments in Debt Securities** • Overview of debt Investments • Debt investment classifications • Held-to-maturity securities • Available-for-sale securities • Trading securities	Examples **16.1** Purchase Held-to-Maturity Security **16.2** Amortization of Held-to-Maturity Security **16.3** Sale Before Maturity **16.4** Purchase Available-for-Sale Security **16.5** Amortization of Available-for-Sale Security **16.6** Fair Value Adjustment **16.7** Trading Securities Put It into Practice **LO 16.1** Account for Debt Investments
LO 16.2 Describe the accounting for investments in equity securities. **LO 16.3** Explain the equity and consolidation methods of accounting.	**16.2 Investments in Equity Securities** • Holdings of less than 20% **16.3 Equity and Consolidation Methods** • Holdings between 20% and 50% • Holdings of more than 50%	Examples **16.8** Fair Value Adjustment—2025 **16.9** Fair Value Adjustment—2026 **16.10** Equity Method Accounting Put It into Practice **LOs 16.2 and 16.3** Account for Equity Securities
LO 16.4 Evaluate other major issues related to investments in debt and equity securities.	**16.4 Other Financial Reporting Issues** • Fair value option • Impairment of value • Presentation of comprehensive income • Transfers related to debt securities • Summary	Examples **16.11** Fair Value Option—Available-for-Sale Security **16.12** Fair Value Option—Equity Method Investments **16.13** Fair Value Option—Note Receivable **16.14** Impairment—Held-to-Maturity Security **16.15** Impairment—The Fair Value Floor

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

16.1 Investments in Debt Securities

LEARNING OBJECTIVE 1

Describe the accounting for investments in debt securities.

Overview of Debt Investments

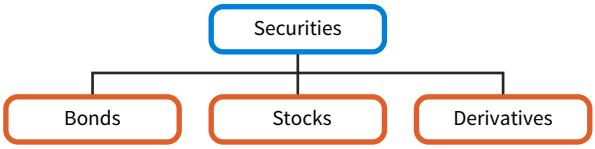
Background

Congratulations! You just won the lottery, and you are going to receive $10 million. So what are you going to do? After you have solved some of the more basic financial issues related to food, lodging, perhaps a nice vacation, and some charitable giving, you will need to consider carefully how you will proceed with such a substantial amount of funds. Let's examine two choices.

1. **Keep yourself liquid**. Buy short-term debt securities like certificates of deposit (CDs) at the bank or short-term Treasury bills that are risk-free. These investments may be a good idea for some of your funds because they are safe and easily accessed, but the returns on those investments are not very high.
2. **Diversify**. Are you risk-averse, risk-neutral, or a risk-taker? If you are risk-neutral, you likely will take a middle track in evaluating investment opportunities. Here is where it gets difficult because there are a variety of investment choices available. Investment experts generally recommend that you develop a diversification strategy. In other words, do not put all your eggs (funds) in one basket (one type of investment).

To implement a diversification strategy, you might invest in assets such as securities, real estate, or a new business. With a focus on investment securities, good candidates for diversification and depending on your risk profile are shown in **Illustration 16.1**. The first two categories—bonds and stocks—should be familiar to you, as we have discussed these types of securities in earlier chapters. We discuss derivatives in an appendix to this chapter.

ILLUSTRATION 16.1 Types of Investment Securities



You will have many bond and stock investment choices to consider:

1. U.S. fixed income (bond) markets represent 38.3% ($47.2 trillion) of the $123.5 trillion in global market capitalization, or 1.9 times the next largest market (European Union).
2. U.S. equity (stock) markets are 38.5% ($47 trillion) of the $105.8 trillion-dollar global securities market capitalization, which is 3.7 times the next largest market (the European Union).[1]

Now this chapter is not about you and your personal finances, but about companies and how they account for the many types of securities offered in the marketplace. Similar to your decision process, companies purchase securities using an investment strategy, which considers such items as liquidity, diversification, and adequate returns.

Financial Assets

A financial asset is an asset whose value comes from a contractual claim to cash flows. In Chapter 6, we discussed two types of financial assets—cash and receivables (primarily short-term). In this chapter, we discuss two other financial assets—debt and equity securities, which also have a contractual right to receive cash from another party. You should recognize that physical assets such as land and buildings are **not** financial assets because their value comes from the use in the business and not from a contractual claim.

The accounting for debt and equity investments depends on whether the security is debt or equity and the company's intent with respect to the investment. **Illustration 16.2** provides an overview of the type of security, the company intent, and valuation.

[1]Sifma, *Capital Markets Fact Book 2021*.

Type of Security	Management Intent	Valuation Approach
Debt	No plans to sell Plan to sell	Amortized cost Fair value
Equity	Plan to sell Exercise some control	Fair value Equity method

ILLUSTRATION 16.2 Summary of Investment Accounting Approaches

Debt Investment Classifications

Debt securities represent a creditor relationship with another entity. Debt securities include U.S. government securities, municipal securities, corporate bonds, convertible debt, and commercial paper.[2] Companies group investments in debt securities into three separate categories for accounting and reporting purposes (see **Global View**):

- **Held-to-maturity**. Debt securities that the company has the positive intent and ability to hold to maturity.
- **Trading**. Debt securities bought and held primarily for sale in the near term to generate income on short-term price differences.
- **Available-for-sale**. Debt securities not classified as held-to-maturity or trading securities.

Illustration 16.3 identifies these categories, along with the accounting and reporting treatments required for each.

Global View

Under IFRS, debt investments are classified as either held-for-collection or trading. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

ILLUSTRATION 16.3 Accounting for Debt Securities by Category

Category	Valuation	Unrealized Holding Gains or Losses	Other Income Effects
Held-to-maturity	Amortized cost	Not recognized	Interest when earned; gains and losses from sale.
Available-for-sale	Fair value	Recognized as other comprehensive income and as separate component of stockholders' equity	Interest when earned; gains and losses from sale.
Trading securities	Fair value	Recognized in net income	Interest when earned; gains and losses from sale.

Amortized cost is the acquisition cost adjusted for the amortization of discount or premium, if appropriate. **Fair value** is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. **[2]**

Held-to-Maturity Securities (Amortized Cost)

Only debt securities can be classified as held-to-maturity. By definition, equity securities have no maturity date. Financial institutions, such as large banks or insurance companies like **JPMorgan Chase**, **Citigroup**, or **Prudential Insurance**, often use held-to-maturity

[2]Trade accounts receivable and loans receivable are not debt securities because they do not meet the definition of a security. A **security** is a share, participation, or other interest in property or in an enterprise of the issuer or an obligation of the issuer that has the following three characteristics. (1) It either is represented by an instrument issued in bearer or registered form or, if not represented by an instrument, is registered in books maintained to record transfers by or on behalf of the issuer. (2) It is commonly traded on securities exchanges or markets or, when represented by an instrument, is commonly recognized in any area in which it is issued or dealt in as a medium for investment. (3) It either is one of a class or series or by its terms is divisible into a class or series of shares, participations, interests, or obligations. **[1]** (See the FASB Codification Reference near the end of the chapter.)

securities as part of their investment strategy. For companies like Citigroup to classify a debt security as held to maturity, they must have both:

1. A positive intent to hold these securities to maturity.
2. The ability to hold these securities to maturity.

Therefore, Citigroup will not classify debt securities as held-to-maturity if it intends to sell the securities before the stated maturity date. Likewise, if Citigroup anticipates that a sale may be necessary due to changes in interest rates, foreign currency risk, liquidity needs, or other asset-liability management reasons, it should not classify the security as held-to-maturity.

Companies use held-to-maturity securities for the following reasons.

- To earn a spread (net income) on the difference between the collection of interest revenue on the debt security and the payment of interest expense on borrowed funds, and therefore have a secured return over a given period of time.
- To diversify their portfolio of investments by making low-risk investments, which are unlikely to default.
- To eliminate the volatility in either reported earnings or reported capital, which might occur if other types of debt securities are used which often must be reported at fair value.

Citigroup accounts for held-to-maturity securities at amortized cost, not fair value. If its management intends to hold debt investment securities to maturity and has no plans to sell them, fair values (selling prices) are not relevant for measuring and evaluating the cash flows associated with these securities. Amortized cost accounting recognizes interest revenue as the primary earnings of the company. Using this approach, companies recognize changes in fair value of an instrument in net income only in the rare instance that they sell the security before maturity and actually realize the gain or loss.

Example 16.1
Purchase Held-to-Maturity Security

FACTS Uptown Financial purchased $100,000 of 8% bonds of Gamedrop Inc. on January 1, 2025, at a discount, paying, $92,278. The bonds mature January 1, 2030, and yield 10%. Interest is payable each July 1 and January 1.

QUESTION What entry should Uptown Financial use to record the purchase of the bonds from Gamedrop, assuming Uptown intends to hold the bonds to maturity?

SOLUTION

Uptown Financial records the investment as follows.

January 1, 2025

Debt Investments	92,278	
Cash		92,278

Uptown's held-to-maturity security was purchased at a discount because it was only paying 8% when the market rate was 10%.

Uptown uses a Debt Investments account to record the cost of the debt security (often referred to as the net method).

Companies generally do not record investments at maturity values with adjustment for separate discount or premium accounts similar to bonds payable. The rationale: The use of the effective-interest method is more easily applied with the net method than using a separate discount or premium account as a valuation account.[3]

[3]Companies generally record investments acquired at par, at a discount, or at a premium in the accounts at cost, including brokerage and other fees but excluding the accrued interest. They generally do not record investments at maturity value. The use of a separate discount or premium account as a valuation account is acceptable procedure for investments, but in practice companies do not widely use it.

As indicated in Chapter 13, companies must amortize a premium or discount using the **effective-interest method** unless some other method—such as the straight-line method—yields a similar result (see **Underlying Concepts**). They apply the effective-interest method to bond investments in a way similar to that for bonds payable. To compute interest revenue:

1. Companies compute the effective-interest rate or yield at the time of investment and apply that rate to the beginning carrying amount (book value) for each interest period.
2. The investment carrying amount is increased by the amortized discount or decreased by the amortized premium in each period.

Underlying Concepts

The use of some simpler method that yields results similar to the effective-interest method is an application of the materiality concept.

Example 16.2 Amortization of Held-to-Maturity Security

FACTS The following is a schedule of interest revenue and bond discount amortization for the Uptown Financial investment in Example 16.1, using the effective-interest method.

8% Bonds Purchased to Yield 10%				
Date	Cash Received	Interest Revenue	Bond Discount Amortization	Carrying Amount of Bonds
1/1/25				$ 92,278
7/1/25	$ 4,000[a]	$ 4,614[b]	$ 614[c]	92,892[d]
1/1/26	4,000	4,645	645	93,537
7/1/26	4,000	4,677	677	94,214
1/1/27	4,000	4,711	711	94,925
7/1/27	4,000	4,746	746	95,671
1/1/28	4,000	4,783	783	96,454
7/1/28	4,000	4,823	823	97,277
1/1/29	4,000	4,864	864	98,141
7/1/29	4,000	4,907	907	99,048
1/1/30	4,000	4,952	952	100,000
	$40,000	$47,722	$7,722	

[a] $4,000 = $100,000 × .08 × 6/12 [b] $4,614 = $92,278 × .10 × 6/12 [c] $614 = $4,614 − $4,000
[d] $92,892 = $92,278 + $614

This schedule shows the effect of the discount amortization on the interest revenue that Uptown records for its investment in Gamedrop bonds.

QUESTIONS (a) How should Uptown Financial record the first semiannual interest payment on July 1, 2025? (b) How should Uptown Financial record the accrual of interest and amortization of the bond discount on December 31, 2025? (c) How should Uptown Financial report this information on its balance sheet at December 31, 2025, and its income statement for 2025?

SOLUTION

a. Uptown Financial records the receipt of the first semiannual interest payment on July 1, 2025, as follows.

July 1, 2025

Cash	4,000	
Debt Investments	614	
Interest Revenue		4,614

b. Uptown Financial accrues interest and amortizes the bond discount on December 31, 2025, as follows.

December 31, 2025

Interest Receivable	4,000	
Debt Investments	645	
Interest Revenue		4,645

c. Uptown Financial reports its investments in Gamedrop's bonds in its December 31, 2025, financial statements as follows.

Balance Sheet

Current assets	
Interest receivable	$4,000
Long-term investments	
Debt investments (held-to-maturity)	$93,537

Income Statement

Other revenues and gains	
Interest revenue ($4,614 + $4,645)	$9,259

Sometimes, a company sells a held-to-maturity debt security so close to its maturity date that a change in the market interest rate would not significantly affect the security's fair value. Such a sale may be considered a sale at maturity and would not call into question the company's original intent to hold the investment to maturity.[4]

Example 16.3
Sale Before Maturity

FACTS Uptown Financial sells its investment in Gamedrop on November 1, 2029, at 99 ¾ plus accrued interest.

QUESTION What entries should Uptown Financial make to record the sale of these bonds on November 1, 2029?

SOLUTION

Uptown must first record the discount from July 1, 2029, to November 1, 2029, which is 4 months, as follows.

November 1, 2029

Debt Investments	635	
Interest Revenue (4/6 × $952 from amortization table)		635

Uptown then computes the gain on the sale of Gamedrop securities as follows.

Selling price of bonds (exclusive of accrued interest, $100,000 × .9975)		$99,750
Less: Book value of bonds on November 1, 2029		
Amortized cost, July 1, 2029	$99,048	
Add: Discount amortized for the period July 1, 2029, to November 1, 2029	635	99,683
Gain on sale of bonds		$ 67

Uptown records the sale of the bonds as follows.

November 1, 2029

Cash	102,417	
Interest Revenue (4/6 × $4,000)		2,667
Debt Investments		99,683
Gain on Sale of Investments		67

The credit to Interest Revenue represents accrued interest for 4 months, for which the purchaser pays cash. The debit to Cash represents the selling price of the bonds plus accrued interest ($99,750 + $2,667). The credit to Debt Investments represents the book value of the bonds on the date of sale. The credit to Gain on Sale of Investments represents the excess of the selling price over the book value of the bonds.

[4]The FASB defines situations where, even though a company sells a security before maturity, it has constructively held the security to maturity and thus does not violate the held-to-maturity requirement. These include selling a security close enough to maturity (such as three months), so that interest rate risk is no longer an important pricing factor.

As indicated earlier, financial companies like banks and insurance companies are the primary users of held-to-maturity securities. For example, a life insurance company like **Prudential** will hold longer maturing bonds to match expected liabilities versus a car insurer, which will use shorter-term bonds. **Citigroup** reports and discusses its held-to-maturity portfolio as follows.

> "Held-to-maturity securities net of allowances (in millions) $104,943. Debt securities classified as held to maturity are securities that the company has both the ability and the intent to hold until maturity and are carried at amortized cost. Interest income on such securities is included in interest revenue."

Companies must be extremely careful with debt securities held-to-maturity. If a company prematurely sells a debt security in this category, the sale may "taint" the entire held-to-maturity portfolio. That is, a management's statement regarding "intent" is no longer credible. Therefore, the company may have to reclassify the securities. This could lead to unfortunate consequences. An interesting by-product of this situation is that companies that wish to retire their debt securities early (the issuers of the debt securities) are finding it difficult to do so. The holder will not sell because the securities are classified as held-to-maturity.

Available-for-Sale Securities (Fair Value Through Other Comprehensive Income)

For accounting purposes, available-for-sale securities are debt securities that are neither held-to-maturity nor trading securities. These securities are used more extensively by companies compared to held-to-maturity securities. In fact, one recent study indicated that available-for-sale securities comprise more than 75% of debt securities portfolios. An important objective for investing in available-for-sale debt securities is to find undervalued securities that may have substantial capital gain potential in the future, in contrast to securities held-to-maturity. Additionally, companies hold available-for-sale securities to:

- Provide income and capital gains over a longer period of time (relative to trading securities, discussed later).
- Diversify their portfolio of investments, thereby reducing risks.
- Provide liquidity in situations where cash is needed for operations, repayment to investors, or use for other investment opportunities.

Companies account for available-for-sale securities as follows.

1. Reported on the balance sheet at fair value, not amortized cost.
2. Differences between fair value and amortized cost are recognized as an unrealized holding gain or loss.
3. Unrealized holding gains or losses are reported in other comprehensive income, not net income (see **Underlying Concepts**).
4. Other comprehensive income is reported in the statement of comprehensive income and is added to (or subtracted from) accumulated comprehensive income, which is reported as a separate component of stockholders' equity.

This approach reduces the volatility of net income as changes in fair value are reported in other comprehensive income, not net income.

Underlying Concepts

Recognizing unrealized gains and losses is an application of the concept of comprehensive income.

Example 16.4 Purchase Available-for-Sale Security

FACTS Graff Corporation purchases $100,000, 10% five-year bonds on January 1, 2024, with interest payable on July 1 and January 1. The bonds sell for $108,111 which results in a premium of $8,111 and an effective interest rate of 8%. Graff classifies the bond investment as available-for-sale.

QUESTION What entry should Graff make to record the bonds?

SOLUTION

Graff records the investment in the bonds as follows.

January 1, 2024

Debt Investments	108,111	
Cash		108,111

Illustration 16.4 presents a schedule of interest revenue and amortization of bond premium for the five-year period using the effective-interest method.

ILLUSTRATION 16.4 Schedule of Interest Revenue and Bond Premium Amortization—Effective-Interest Method

10% Bonds Purchased to Yield 8%

Date	Cash Received	Interest Revenue	Bond Premium Amortization	Carrying Amount of Bonds
1/1/24				$108,111
7/1/24	$ 5,000[a]	$ 4,324[b]	$ 676[c]	107,435[d]
1/1/25	5,000	4,297	703	106,732
7/1/25	5,000	4,269	731	106,001
1/1/26	5,000	4,240	760	105,241
7/1/26	5,000	4,210	790	104,451
1/1/27	5,000	4,178	822	103,629
7/1/27	5,000	4,145	855	102,774
1/1/28	5,000	4,111	889	101,885
7/1/28	5,000	4,075	925	100,960
1/1/29	5,000	4,040	960	100,000
	$50,000	$41,889	$8,111	

[a] $5,000 = $100,000 × .10 × 6/12 [b] $4,324 = $108,111 × .08 × 6/12 [c] $676 = $5,000 − $4,324
[d] $107,435 = $108,111 − $676

Example 16.5 Amortization of Available-for-Sale Security

FACTS Refer to the amortization schedule in Illustration 16.4.

QUESTION What entries would Graff make on July 1, 2024, and December 31, 2024, to record interest revenue?

SOLUTION

Using the effective-interest method, the entry to record interest revenue on July 1, 2025, is as follows.

July 1, 2024

Cash	5,000	
Debt Investments		676
Interest Revenue		4,324

At December 31, 2024, Graff makes the following entry to recognize interest revenue.

December 31, 2024

Interest Receivable	5,000	
Debt Investments		703
Interest Revenue		4,297

As a result, Graff reports interest revenue for 2024 of $8,621 ($4,324 + $4,297).

Continuing with Example 16.5, Graff then turns its attention to determining the fair value of its debt investments to record any unrealized gain or loss for 2024.

Example 16.6 Fair Value Adjustment

FACTS Refer to data for Graff's available-for-sale investment in Illustration 16.4. Graft determines that the fair value of the bonds is $105,000 and that the carrying amount of the investments is $106,732 (from the amortization table) at December 31, 2024.

QUESTIONS (a) What entry should Graff make to record the unrealized gain or loss on December 31, 2024, and (b) how would Graff report the available-for-sale investment and related accounts on its December 31, 2024, balance sheet?

SOLUTION

a. Graff recognizes an unrealized holding loss of $1,732 ($106,732 − $105,000). Graff makes the following entry.

December 31, 2024		
Unrealized Holding Gain or Loss—Equity	1,732	
Fair Value Adjustment		1,732

Graff uses an **Unrealized Gain or Loss—Equity account** to signify that the unrealized gain or loss is reported in other comprehensive income, **not** in net income. The unrealized loss is a debit, like other types of losses you have studied in previous chapters.

Graff also uses a valuation account instead of crediting the Debt Investments account. The use of the **Fair Value Adjustment**[5] account enables the company to maintain a record of its amortized cost. Because the adjustment account has a credit balance in this case, Graff subtracts it from the balance of the Debt Investments account to determine fair value.

b. Reporting in Graff's balance sheet is as follows.

Investments:	
Debt investment, net ($106,732 − $1,732)	$105,000*
Stockholders' equity:	
Accumulated other comprehensive loss	$1,732

As indicated, the Unrealized Holding Gain or Loss—Equity account is reported in stockholders' equity as accumulated other comprehensive loss. The available-for-sale security is reported on the December 31, 2024, balance sheet net of the balance in the Fair Value Adjustment account.

Portfolio of Securities

Companies often have multiple available-for-sale investments. Rather than make fair value adjustments to each individual investment, it is more efficient to make one fair value adjustment for the entire portfolio of available-for-sale investments, To illustrate the accounting for a portfolio of securities, assume that Webb Corporation has two debt securities classified as available-for-sale. **Illustration 16.5** identifies the amortized cost, fair value, and the amount of the unrealized gain or loss.

Available-for-Sale Debt Security Portfolio
December 31, 2025

Investments	Amortized Cost	Fair Value	Unrealized Gain (Loss)
Watson Corporation 8% bonds	$ 93,537	$103,600	$10,063
Anacomp Corporation 10% bonds	200,000	180,400	(19,600)
Total of portfolio	$293,537	$284,000	(9,537)
Previous fair value adjustment balance			–0–
Fair value adjustment—Cr.			$ (9,537)

ILLUSTRATION 16.5
Computation of Fair Value Adjustment—Available-for-Sale Securities (2025)

[5]Various account titles might be used instead of Fair Value Adjustment, such as Fair Value Allowance or Valuation Allowance for Debt Investments. *For homework problems, use the account title Fair Value Adjustment.*

The fair value of Webb's available-for-sale portfolio totals $284,000. The gross unrealized gains are $10,063, and the gross unrealized losses are $19,600, resulting in a net unrealized loss of $9,537. That is, the total fair value of available-for-sale securities is $9,537 lower than its total amortized cost. Webb makes an adjusting entry to a valuation allowance to record the decrease in value and to record the loss as follows.

December 31, 2025		
Unrealized Holding Gain or Loss—Equity	9,537	
Fair Value Adjustment		9,537

Webb reports the unrealized holding loss of $9,537 as other comprehensive income, which results in a reduction of stockholders' equity. Recall that companies exclude from net income any unrealized holding gains and losses related to available-for-sale securities.

Sale of Available-for-Sale Securities

If a company sells bonds carried as investments in available-for-sale securities before the maturity date, it must make entries to remove from the Debt Investments account the amortized cost of bonds sold. To illustrate, assume that Webb Corporation sold the Watson bonds (from Illustration 16.5) on July 1, 2026, for $90,000, at which time it had an amortized cost of $94,214. **Illustration 16.6** shows the computation of the **realized** loss.

ILLUSTRATION 16.6
Computation of Loss on Sale of Bonds

Amortized cost (Watson bonds)	$94,214
Less: Selling price or bonds	90,000
Loss on sale of bonds	$ 4,214

Webb records the sale of the Watson bonds as follows.

July 1, 2026		
Cash	90,000	
Loss on Sale of Investments	4,214	
Debt Investments		94,214

Webb reports this realized loss in the "Other expenses and losses" section of the income statement.

Notice the entry to record the sale does **not** include any adjustments for previously recognized fair value adjustments of the Watson bonds. An adjustment will be made at year-end when the entire portfolio is evaluated for fair value adjustment. Assuming no other purchases and sales of bonds in 2026, Webb on December 31, 2026, prepares the information shown in **Illustration 16.7**.

ILLUSTRATION 16.7
Computation of Fair Value Adjustment—Available-for-Sale Securities (2026)

Available-for-Sale Debt Security Portfolio
December 31, 2026

Investments	Amortized Cost	Fair Value	Unrealized Gain (Loss)
Anacomp Corporation 10% bonds (total portfolio)	$200,000	$195,000	$(5,000)
Previous fair value adjustment balance—Cr.			(9,537)
Fair value adjustment—Dr.			$ 4,537

Webb has an unrealized holding loss of $5,000. However, the Fair Value Adjustment account already has a credit balance of $9,537. To reduce the adjustment account balance to $5,000, Webb debits it for $4,537, as follows.

Fair Value Adjustment

	12/31/25	9,537
Adjustment	4,537	
	12/31/26	5,000

December 31, 2026		
Fair Value Adjustment	4,537	
Unrealized Holding Gain or Loss—Equity		4,537

You should recognize that the Fair Value Adjustment account has been adjusted to the current balance needed to report the fair value of $195,000 related to the Anacomp bonds at December 31, 2026. The unrealized holding gain related to the Watson bonds that were sold is gone. Therefore, the fair value adjustment made on December 31, 2026, has the effect of removing Watson's unrealized gains recognized in prior periods on the sold investment. As a result, there is no double-counting of Watson's **unrealized** holding gain and **realized** holding gain.

Financial Statement Presentation

Webb's December 31, 2026, balance sheet and the 2026 income statement include the items and amounts shown in **Illustration 16.8**. The Anacomp bonds are long-term investments but are not intended to be held to maturity. In most cases, available-for-sale investments are reported as current assets.

ILLUSTRATION 16.8 Reporting of Available-for-Sale Securities

Balance Sheet	
Current assets	
Interest receivable	$ xxx
Investments	
Debt investments (available-for-sale)	195,000
Stockholders' equity	
Accumulated other comprehensive loss	$5,000
Income Statement	
Other revenues and gains	
Interest revenue	$ xxx
Other expenses and losses	
Loss on sale of investments	4,214

Some favor including the unrealized holding gain or loss in net income rather than showing it as other comprehensive income.[6] However, some companies, particularly financial institutions, note that recognizing gains and losses on assets, but not liabilities, introduces substantial volatility in net income. They argue that hedges often exist between assets and liabilities so that gains in assets are offset by losses in liabilities, and vice versa. In short, to recognize gains and losses only on the asset side is unfair and not representative of the economic activities of the company.

This argument convinced the FASB. As a result, companies **do not include in net income** these unrealized gains and losses. **[3]** However, even this approach solves only some of the problems because **volatility of capital** still results. This is of concern to financial institutions because regulators restrict financial institutions' operations based on their level of capital. However, companies can still manage their net income by engaging in **gains trading** (i.e., selling the winners and holding the losers).

Trading Securities (Fair Value Through Net Income)

We now turn our attention to the third debt security classification, identified as trading securities. "Trading" in this context means frequent buying and selling. Companies hold **trading securities** with the intention of selling them in a short period of time, generally holding these investments for less than three months (some for merely days or hours). Companies use trading securities to:

- Generate profits from short-term differences in price. Holding cash in a savings account provides little return. Investing in short-term securities like Treasury bills, commercial paper, CDs, and municipal bonds provides a better return with little additional risk.
- Provide liquidity as these types of securities can easily be bought and sold in markets with little downside risk.

[6] In Chapter 3, we discussed the concept of, and reporting for, other comprehensive income.

Companies report trading securities at fair value, with unrealized holding gains and losses reported as part of net income. Similar to held-to-maturity or available-for-sale investments, companies are required to amortize any discount or premium.

A **holding gain or loss** is the net change in the fair value of a security from one period to another, exclusive of dividend or interest revenue recognized but not received. In short, the FASB says to adjust the trading securities to fair value, at each reporting date. In addition, companies **report the change in value as part of net income, not other comprehensive income**.

Example 16.7
Trading Securities

FACTS Assume that on December 31, 2025, **Venture Publishers** determined its trading securities portfolio to be as follows (assume that 2025 is the first year that Venture Publishers held trading securities).

Trading Debt Security Portfolio
December 31, 2025

Investments	Amortized Cost	Fair Value	Unrealized Gain (Loss)
Municipal bonds	$ 43,860	$ 51,500	$ 7,640
Treasury bonds	184,230	175,200	(9,030)
Certificates of deposit	86,360	91,500	5,140
Total of portfolio	$314,450	$318,200	3,750
Previous fair value adjustment balance			–0–
Fair value adjustment—Dr.			$ 3,750

At the date of acquisition, Venture Publishers recorded these trading securities at cost, including brokerage commissions and taxes, in the account entitled Debt Investments. This is the first valuation of this recently purchased portfolio.

QUESTION What entry should Venture make to record these securities at December 31, 2025?

SOLUTION

The total cost of Venture Publishers' trading portfolio is $314,450. The gross unrealized gains are $12,780 ($7,640 + $5,140), and the gross unrealized losses are $9,030, resulting in a net unrealized gain of $3,750. The fair value of trading securities is therefore $3,750 greater than its amortized cost.

At December 31, Venture Publishers makes an adjusting entry to the Fair Value Adjustment account, to record both the increase in value and the unrealized holding gain.

December 31, 2025

Fair Value Adjustment	3,750	
Unrealized Holding Gain or Loss—Income		3,750

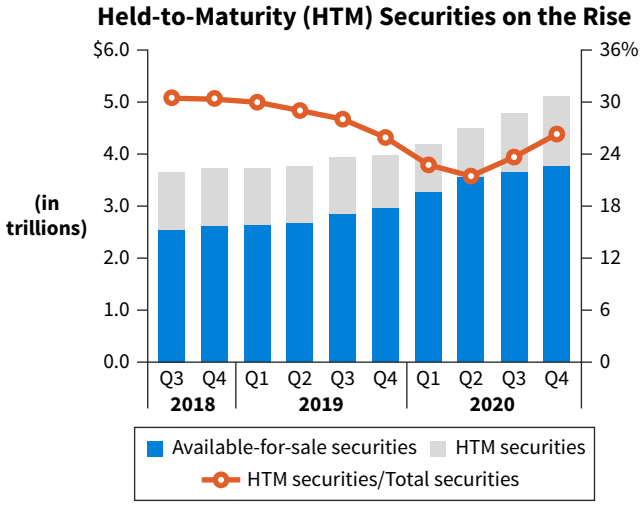
Because the Fair Value Adjustment account balance is a debit, Venture Publishers adds it to the cost of the Debt Investments account to arrive at a fair value for the trading securities. Venture Publishers reports this fair value amount on the balance sheet. The term "Income" in the account title Unrealized Gain or Loss—Income indicates that the gain is reported in net income.

As with other debt investments, when a trading investment is sold, the Debt Investments account is reduced by the amount of the amortized cost of the bonds. Any **realized** gain or loss is recorded in the "Other revenues and gains" or the "Other expenses and losses" section of the income statement. The Fair Value Adjustment account is then adjusted at year-end for the unrealized gains or losses on the remaining securities in the trading investment portfolio, similar to the process for available-for-sale investments.

When securities are actively traded, the FASB believes that the investments should be reported at fair value on the balance sheet. Trading securities are reported as short-term investments on the balance sheet as part of current assets. In addition, changes in fair value (unrealized gains and losses) should be reported in income. Such reporting on trading securities provides more relevant information to existing and prospective stockholders.

Accounting Matters — To Have and to Hold

To have and to hold, to maturity? The differences in accounting treatment between bond investments classified as available-for-sale and held-to-maturity can have a real impact on a company's investment strategy, especially for banks. While the majority of bonds owned by banks are still classified as available-for-sale, the following chart shows that the held-to-maturity category is on the rise, outside of a temporary decline in 2020 due to the impact of Covid-19.



Source: S&P Global Market Intelligence.

As interest rates rise and bond values decline, banks may look to move more securities into the held-to-maturity category to avoid reporting unrealized holding losses in their other comprehensive income. For large banks, those with over $700 billion in assets, changes in accumulated other comprehensive income impact regulatory capital. The relative safety of held-to-maturity investments, carried at amortized cost, helps minimize income volatility.

What happened during 2020, however, when the Covid-19 pandemic impacted the global economy and demands on bank liquidity increased unexpectedly? Bank retail and commercial customers sought to defer loan payments and loan demand increased from small businesses as a result of the Paycheck Protection Program. Could banks liquidate investments from their held-to-maturity portfolios without tainting the remaining investments in the portfolio? As it turns out, GAAP has guidance in place allowing companies to sell or transfer held-to-maturity securities in the event of isolated, nonrecurring, and unusual events that the company could not have reasonably anticipated. Covid-19 seems to meet that requirement!

Sources: Nathan Stovall and Ronamil Portes, "Big Banks Holding More than 60% of Bonds to Maturity to Protect Capital," *S&P Global Market Intelligence* (September 17, 2021); and Accounting Standards Codification, Section 320-10-25.

Put It into Practice LO 16.1
Account for Debt Investments

FACTS Rogers Corporation holds the following bond investments, which were purchased in 2025.

Date Purchased	Description	Amount Paid
April 1	U.S. government bonds, 5%, due April 1, 2030, interest payable April 1 and October 1, 100 bonds at $1,000 each	$100,000
July 1	Driver Company 6% bonds, par $50,000, dated July 1, 2016, purchased at par, interest payable annually on July 1, due July 1, 2040	50,000

INSTRUCTIONS

a. Prepare entries when the bonds were purchased, assuming the bonds are classified as available-for-sale.

b. Prepare the entry to record the accrued interest on December 31, 2025.

c. The fair values of the securities on December 31, 2025, were U.S. government bonds $124,700 and Driver Company bonds $58,600. What entry or entries, if any, would you recommend be made?

d. The U.S. government bonds were sold on July 1, 2026, for $119,200 plus accrued interest. Give the proper entry.

e. Briefly describe how the accounting in part (c) for these investments would change if the securities are classified as (1) held-to-maturity and (2) trading.

SOLUTION

a. Rogers makes the following entries for purchase of the bonds.

April 1, 2025		
Debt Investments (available-for-sale)	100,000	
Cash		100,000

July 1, 2025

Debt Investments (available-for-sale)	50,000	
Cash		50,000

b. Accrued interest for 2025 would be recorded as follows.

December 31, 2025

Interest Receivable	2,750	
Interest Revenue		2,750*

*U.S. government bonds: $100,000 × .05 × 3/12 (October–December interest paid April 1, 2026) $1,250

Driver company bonds: $50,000 × .06 × 6/12 (July–December interest paid July 1, 2026) 1,500

$2,750

c. The following entry should be made to record the fair value adjustment.

December 31, 2025

Fair Value Adjustment	33,300**	
Unrealized Holding Gain or Loss—Equity		33,300

**

Available-for-Sale Portfolio
December 31, 2025

Securities	Cost	Fair Value	Unrealized Gain (Loss)
U.S. government bonds	$100,000	$124,700	$24,700
Driver Company bonds	50,000	58,600	8,600
Total	$150,000	$183,300	33,300
Previous fair value adjustment balance			0
Fair value adjustment—Dr.			$33,300

d.

July 1, 2026

Cash ($119,200 + $1,250)	120,450	
Debt Investments (available-for-sale)		100,000
Interest Revenue ($100,000 × .05 × 3/12)		1,250
Gain on Sale of Investments		19,200

e. 1. If classified as held-to-maturity, the bonds are accounted for at amortized cost with no fair adjustment. Therefore, there is no journal entry required for part (c).

2. If classified as trading, the bonds are accounted for at fair value with any unrealized gains and losses recorded in income. So the account credited in the entry for part (c) is Unrealized Holding Gain or Loss—Income.

16.2 Investments in Equity Securities

LEARNING OBJECTIVE 2

Describe the accounting for investments in equity securities.

Equity securities represent ownership interests such as common, preferred, or other capital stock. They also include rights to acquire or dispose of ownership interests at an agreed-on or determinable price, such as in warrants, rights, and call or put options. Companies do **not** treat convertible debt securities as equity securities. The cost of equity securities includes the purchase price of the security plus broker's commissions and other fees incidental to the purchase.

The degree to which one corporation (**investor**) acquires an interest in the common stock of another corporation (**investee**) generally determines the accounting treatment for the investment subsequent to acquisition. The classification of such investments depends on the percentage of the investee voting stock that is held by the investor:

1. Holdings of less than 20% (**fair value method**)—investor has passive interest.
2. Holdings between 20% and 50% (**equity method**)—investor has **significant influence**.
3. Holdings of more than 50% (**consolidated statements**)—investor has controlling interest.

Illustration 16.9 lists these levels of interest or influence and the corresponding valuation and reporting method that companies must apply to the investment.

Percentage of Ownership	0% ⟷ 20%	⟷ 50%	⟷ 100%
Level of influence	Little or none	Significant	Control
Valuation method	Fair value method	Equity method	Consolidation

ILLUSTRATION 16.9 Levels of Influence Determine Accounting Methods

The accounting and reporting for equity securities therefore depend on the level of influence as shown in Illustration 16.10.

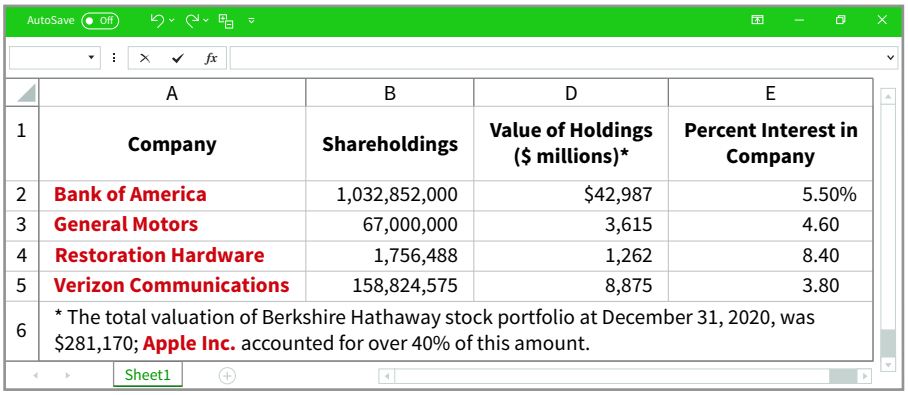
Category	Valuation	Unrealized Holding Gains or Losses	Other Income Effects
Holdings less than 20%	Fair value*	Recognized in net income	Dividends declared; gains and losses from sale
Holdings between 20% and 50%	Equity	Not recognized	Proportionate share of investee's net income
Holdings more than 50%	Consolidation	Not recognized	Not applicable

*Companies report equity holdings of less than 20% at fair value and record unrealized gains and losses through net income. The only exception would be for practicability reasons for determining fair value.

ILLUSTRATION 16.10 Accounting and Reporting for Equity Securities by Category

Holdings of Less Than 20%

Why do companies invest in the stock of other companies? You might ask Warren Buffett of **Berkshire Hathaway**. Buffett has run Berkshire Hathaway for many years, and the company has a stock portfolio of over 30 different companies. For example, Illustration 16.11 shows a recent listing of four of the companies held by Berkshire Hathaway, the shareholdings, the value of these holdings, and the percent interest owned.



	A	B	D	E
1	**Company**	**Shareholdings**	**Value of Holdings ($ millions)***	**Percent Interest in Company**
2	**Bank of America**	1,032,852,000	$42,987	5.50%
3	**General Motors**	67,000,000	3,615	4.60
4	**Restoration Hardware**	1,756,488	1,262	8.40
5	**Verizon Communications**	158,824,575	8,875	3.80
6	* The total valuation of Berkshire Hathaway stock portfolio at December 31, 2020, was $281,170; **Apple Inc.** accounted for over 40% of this amount.			

ILLUSTRATION 16.11 Partial Stock Portfolio of **Berkshire Hathaway**

Here is what Buffett might say as to why Berkshire Hathaway has such a significant investment in equity securities.

- **Rates of return.** We invest in equity securities because the rates of return are generally higher than debt securities. As a result, Berkshire Hathaway has made the decision that returns related to dividend revenue and capital gains will be much higher than through debt investments.
- **Liquidity.** Equity securities are very liquid because shares of stock can be sold very quickly in case of expected or unexpected business needs. Given the liquidity in the stock market, the company can easily sell off some of its existing stock to generate funds necessary for business needs.
- **Diversification.** Although Berkshire Hathaway has a substantial position in **Apple**, it has many other stocks in its portfolio that provide substantial diversification of its portfolio. By having this diversification, it minimizes the risks associated with its own business ventures and can offset good and bad performances of stock in the portfolio.

Are there any disadvantages to having such a large portfolio of equity investments? One possible disadvantage is that for financial reporting purposes, stock investment holdings of less than 20% are reported at fair value with gains or losses reported in net income, which is the **fair value method**.

Buffet seems to think there should be another approach because he believes these gains and losses should not be part of earnings until realized. As noted earlier, the FASB believes that when an investor has an interest of less than 20%, it is presumed that the investor has little or no influence over the investee in such cases. If market prices are available subsequent to acquisition, the company values and reports the investment using the fair value method.

In some cases, companies can use a practicability exception when measuring equity securities that do not have a readily determinable fair value, often referred to as nonmarketable equity securities. If the practicability exception is elected, companies record investments at cost, less impairment. Companies recognize dividends when received and generally recognize gains and losses when selling the securities.[7]

Fair Value Method

Upon acquisition, companies record equity securities at cost.[8] To illustrate, assume that on November 3, 2025, **Amazon** purchased the following common stock of three companies, each investment representing less than a 20% interest.

	Cost (in thousands)
Nike	$259,700
Tesla	317,500
Nautilus	141,350
Total cost	$718,550

Amazon records these investments as follows.

	November 3, 2025	
Equity Investments	718,550	
Cash		718,550

[7]A company is encouraged to adjust for observable price changes subsequent to recording the investment at cost if it can determine prices in orderly transactions for identical investments or from similar investments of the same issuer.

[8]Companies should record equity securities acquired in **exchange for noncash consideration** (property or services) at (1) the fair value of the consideration given, or (2) the fair value of the security received, whichever is more clearly determinable. Accounting for numerous purchases of securities requires the preservation of information regarding the cost of individual purchases, as well as the dates of purchases and sales. If specific identification is not possible, companies may use average-cost for multiple purchases of the same class of security. The **first-in, first-out method (FIFO)** of assigning costs to investments at the time of sale is also acceptable and normally employed.

On December 6, 2025, Amazon receives a cash dividend of $4,200 on its investment in the common stock of Nike. It records the cash dividend as follows.

December 6, 2025

Cash	4,200	
Dividend Revenue		4,200

All three of the investee companies reported net income for the year, but only Nike declared and paid a dividend to Amazon. Amazon does not recognize any revenue related to the net income of the three investees. Why?

1. It is presumed that Amazon has little influence over the investees if it owns less than 20% of common stock of another corporation. **As a result, net income is not a proper basis for recognizing income from the investment.**
2. The increased net assets resulting from profitable operations of the investees may be permanently retained for use in the investees' businesses.

Therefore, the investor recognizes revenue only when the investee declares cash dividends. In this case, Amazon does recognize revenue when the investee (in this case, Nike) declares a cash dividend.

Example 16.8 Fair Value Adjustment—2025

FACTS At December 31, 2025, assume that **Amazon**'s equity security portfolio has the following cost and fair value.

Investments	Cost	Fair Value	Unrealized Gain (Loss)
Nike	$259,700	$275,000	$ 15,300
Tesla	317,500	304,000	(13,500)
Nautilus	141,350	104,000	(37,350)
Total of portfolio	$718,550	$683,000	(35,550)
Previous fair value adjustment balance			–0–
Fair value adjustment—Cr.			$(35,550)

QUESTION What entry should Amazon make on December 31, 2025, related to its investment portfolio?

SOLUTION

For Amazon's equity securities portfolio, the gross unrealized gains are $15,300, and the gross unrealized losses are $50,850 ($13,500 + $37,350), resulting in a net unrealized loss of $35,550. That is, the fair value of the equity securities portfolio is below cost by $35,550.

Amazon records the net unrealized gains and losses related to changes in the fair value of these securities in an Unrealized Holding Gain or Loss—Income account. In this case, Amazon prepares an adjusting entry debiting the Unrealized Holding Gain or Loss—Income account and crediting the Fair Value Adjustment account to record the decrease in fair value and to record the loss as follows.

December 31, 2025

Unrealized Holding Gain or Loss—Income	35,550	
Fair Value Adjustment		35,550

Continuing with our Amazon example, now assume that on January 23, 2026, Amazon sold all of its Nike common stock, receiving net proceeds of $287,220. **Illustration 16.12** shows the computation of the realized gain on the sale.

Net proceeds from sale	$287,220
Cost of **Nike** shares	259,700
Gain on sale of investment	$ 27,520

ILLUSTRATION 16.12
Computation of Gain on Sale of Investment

Amazon records the sale as follows.

	January 23, 2026	
Cash	287,220	
Equity Investments		259,700
Gain on Sale of Investments		27,520

Example 16.9 Fair Value Adjustment—2026

FACTS Assume that on February 10, 2026, **Amazon** purchased 20,000 shares of **Netgear** at a market price of $12.75 per share, plus brokerage commissions of $1,850 (total cost, $256,850). Amazon's portfolio of equity securities as of December 31, 2026, is as follows.

Investments	Cost	Fair Value	Unrealized Gain (Loss)
Netgear	$256,850	$278,350	$21,500
Tesla	317,500	362,550	45,050
Nautilus	141,350	139,050	(2,300)
Total of portfolio	$715,700	$779,950	64,250
Previous fair value adjustment balance—Cr.			(35,550)
Fair value adjustment—Dr.			$99,800

QUESTION What entry should Amazon make on December 31, 2026, related to its investment portfolio?

SOLUTION

At December 31, 2026, the fair value of Amazon's equity securities portfolio exceeds cost by $64,250 (unrealized gain). The Fair Value Adjustment account had a credit balance of $35,550 at December 31, 2025. To adjust its December 31, 2026, equity portfolio to fair value, the company debits the Fair Value Adjustment account for $99,800 ($35,550 + $64,250). Amazon records this adjustment as follows.

	December 31, 2026	
Fair Value Adjustment	99,800	
Unrealized Holding Gain or Loss—Income		99,800

Fair Value Adjustment

		12/31/25	35,550
Adjustment	99,800		
12/31/26	64,250		

In Example 16.9, you should recognize that the Fair Value Adjustment account has been adjusted to the current balance needed to report the fair value of $779,950 ($715,700 + $64,250) related to the three equity securities at December 31, 2026. The unrealized holding gain related to the **Nike** investment that was sold is gone. The fair value adjustment made on December 31, 2026, has the effect of removing Nike's unrealized gain that had been recognized in prior periods on the sold investment. As a result, there is no double counting of Nike's unrealized holding gain and realized holding gain.

Financial Statement Presentation

Equity investments accounted for under the fair value method are reported in the balance sheet as either current or noncurrent assets, depending on management's intent to hold them for short-term profits or longer-term gains. At the end of a reporting period, unrealized holding gains or losses from equity investments are reported in the income statement as "Other revenues and gains" or "Other expenses or losses."

Holdings Between 20% and 50% (Equity Method)

LEARNING OBJECTIVE 3

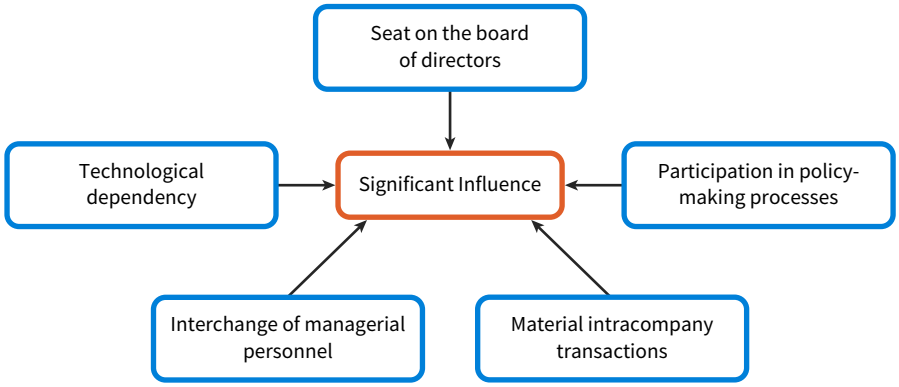
Explain the equity and consolidation methods of accounting.

An investor corporation may hold an interest of less than 50% of an investee corporation and therefore not possess legal control. However, an investment in voting stock of less than 50%

can still give the investor the ability to exercise **significant influence** over the operating and financial policies of an investee. [4]

For example, at one time **Siemens AG** owned 34% of **Areva** (which constructs power plants). Areva is very important to Siemens because the power industry is a key customer for its generators and other power-related products. Siemens has significant but not controlling ownership stake in a power plant construction company, which helps Siemens push its products into the market. Other examples of significant influence are the **Berkshire Hathaway** ownership of 26.6% of **Kraft Heinz Co.** or its 34.4% interest in healthcare provider **DaVita**. Significant influence may be indicated in several ways. **Illustration 16.13** shows items to consider when evaluating whether significant influence occurs.

ILLUSTRATION 16.13
Significant Influence Factors

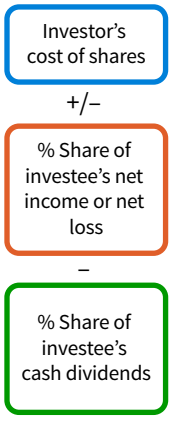


Another important consideration in evaluating significant influence is the extent of ownership by an investor in relationship to the concentration of other shareholdings. For example, an investment of 18% could convey influence if no other investor holds more than 5% of the shares.[9] To achieve a reasonable degree of uniformity and application of the significant influence criterion, the profession concluded that an investment (direct or indirect) of 20% or more of the voting stock of an investee should lead to a presumption, that in the absence of evidence to the contrary, an investor has the ability to exercise significant influence over an investee. In instances of "significant influence," the investor accounts for the investment using the equity method.

Accounting for the Equity Method

Under the **equity method**, the investor and the investee acknowledge a substantive economic relationship. The accounting for the investment account under the equity method is as follows.

- The investment at the time of purchase is recorded at the cost of the shares acquired.
- The investor's proportionate share of the income (losses) of the investee periodically increases or decreases the investment's carrying amount.
- Cash dividends received by the investor from the investee decreases the investment's carrying amount.



FACTS Mylar Corporation acquires 30% of the common stock of **Borden Company** for $120,000 on January 1, 2025. For the year ending 2025, Borden reports net income of $100,000 and pays a $40,000 cash dividend on December 31, 2025.

QUESTION How should Mylar record these transactions in 2025?

Example 16.10
Equity Method Accounting

[9] GAAP provides examples in which an investment of 20% or more might not enable an investor to exercise significant influence. [5]

SOLUTION

The entry to purchase the Borden Company stock is as follows.

January 1, 2025

Equity Investments (Borden)	120,000	
Cash		120,000

On December 31, 2025, Mylar must record its share of Borden's income and a reduction in the investment account for the dividends received. The entries are as follows.

December 31, 2025

Equity Investments (Borden)	30,000	
Investment Income (.30 × $100,000)		30,000
Cash (.30 × $40,000)	12,000	
Equity Investments (Borden)		12,000

In summary, the investment account increased by $18,000, which is explained as follows: (1) Mylar records a $30,000 increase, based on its share of Borden's income, and (2) Mylar records a $12,000 decrease in its investment due to dividends received. The changes in Mylar's investment account changed relative to the change in Borden Company's total equity.[10]

Equity Investments (Borden)

1/1/25	120,000	
12/31/25	30,000	12/31/25 12,000
Balance	138,000	

Comparison of Equity Method to Fair Value

To illustrate the equity method and compare it with the fair value method, assume that Maxi Company purchases a 20% interest in Mini Company. First consider that Maxi **does not have** the ability to exercise significant influence and applies the fair value method. Then consider that Maxi does exercise significant influence and applies the equity method. Illustration 16.14 shows the entries.

ILLUSTRATION 16.14 Comparison of Fair Value Method and Equity Method

Entries by Maxi Company

Fair Value Method			Equity Method		
On January 2, 2025, Maxi Company acquired 48,000 shares (20% of Mini Company common stock) at a cost of $10 a share:					
Equity investments	480,000		Equity Investments	480,000	
Cash		480,000	Cash		480,000
For the year 2025, Mini Company reported net income of $200,000; Maxi Company's share is 20%, or $40,000:					
No entry			Equity Investments	40,000	
			Investment Income		40,000
At December 31, 2025, the 48,000 shares of Mini Company have a fair value (market price) of $12 a share, or $576,000:					
Fair Value Adjustment	96,000		No entry		
Unrealized Holding Gain or Loss—Income ($576,000 − $480,000)		96,000			
On January 28, 2026, Mini Company announced and paid a cash dividend of $100,000; Maxi Company received 20%, or $20,000:					
Cash	20,000		Cash	20,000	
Dividend Revenue		20,000	Equity Investments		20,000
For the year 2026, Mini Company reported a net loss of $50,000; Maxi Company's share is 20%, or $10,000:					
No entry			Investment Loss	10,000	
			Equity Investments		10,000
At December 31, 2026, the Mini Company 48,000 shares have a fair value (market price) of $11 a share, or $528,000:					
Unrealized Holding Gain or Loss— Income	48,000		No entry		
Fair Value Adjustment		48,000			

[10]Similar adjustments would be made for the investor's share of comprehensive income recorded, if any) by the investee company during the year.

With reference to Illustration 16.14, let's review the rationale for different methods of accounting for equity securities. The key driver of these different methods is the amount of influence the investor has over the investee. Suppose Maxi owns 20% in Mini, which results in Maxi occupying a seat on Mini's board of directors. This situation generally qualifies as having significant influence and requires the use of the equity method. Consider these implications of significant influence:

- **Net income/loss**. The board of directors participates in Mini's strategic planning and high-level operating decisions. Therefore, Maxi is involved, at a high level, in the management of Mini. If Mini is successful, it follows that Maxi should report its share of that success. Maxi recognizes this by **increasing** its equity investment account by 20% of Mini's net income ($40,000) and recording investment income. What if Mini is unsuccessful and reports a net loss? Maxi also reports its share by **decreasing** its equity investment account by 20% of Mini's net loss ($10,000) and recording an investment loss.
- **Dividends**. It is the board of directors that authorizes the amount and payment of dividends. Therefore, Maxi has the ability to influence whether Mini pays a dividend. Should Maxi be allowed to report dividend revenue if it has the ability to influence the payment of that dividend? The FASB has decided no. Under the equity method, Maxi records the receipt of cash dividends as a **decrease** in the equity investment account, not as revenue. If Maxi is already recording its share of Mini's net income as revenue, then it would be double-counting to also report a dividend, which is a distribution of earnings, as revenue.

If Maxi does not have a seat on the board and otherwise has no significant influence, then the fair value method is used. Maxi would **not** report its share of Mini's net income or loss because Maxi had no influence over Mini's operating performance. Maxi would only recognize as revenue its share of Mini's dividends, if Mini pays dividends.

For some companies, equity accounting can be a real pain to the bottom line. For example, **Amazon** struggled to turn a profit at one time. Furthermore, some of Amazon's equity investments (in such companies as **Altera International**, **Basis Technology**, **Drugstore.com**, and **Eziba.com**) had resulted in Amazon's earnings performance going from bad to worse. These equity investees reported losses that made Amazon's already bad bottom line even worse, accounting for up to 22% of its reported loss in one year alone.

Investee Losses Exceed Carrying Amount

If an investor's share of the investee's losses exceeds the carrying amount of the investment, should the investor recognize additional losses? Ordinarily, the investor should discontinue applying the equity method and not recognize additional losses.

If the investor's potential loss is not limited to the amount of its original investment (by guarantee of the investee's obligations or other commitment to provide further financial support) or if imminent return to profitable operations by the investee appears to be assured, the investor should recognize additional losses. **[6]** For example, **Berkshire Hathaway** describes its policy in this area as follows.

> "In the event that net losses of the investee reduced the carrying amount to zero, additional net losses may be recorded if other investments in the investee are at risk, even if we have not committed to provide financial support to the investee. Such additional equity method losses, if any, are based upon the change in our claim on the investee's book value."

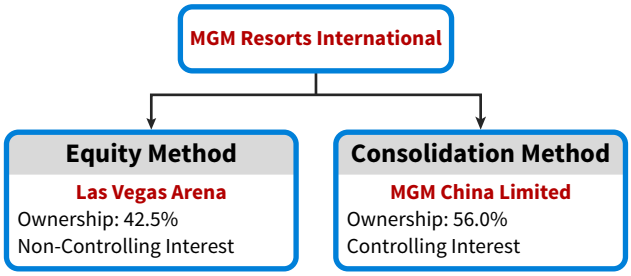
Holdings of More Than 50% (Consolidation)

When one corporation acquires a voting interest of more than 50% in another corporation, it is said to have a **controlling interest**. In such a relationship, the investor corporation is referred to as the **parent** and the investee corporation as the **subsidiary**. Companies present the investment in the common stock of the subsidiary as a long-term investment on the separate financial statements of the parent.

For example, **MGM Resorts International** (casino and resorts company) has a subsidiary, **MGM China Limited**, in which it has a 56% interest. In addition, it has a 42.5% interest

in **Las Vegas Arena Company**, which has one of the highest revenue-producing arenas in the country. **Illustration 16.15** highlights the difference in accounting related to these different ownership structures.

ILLUSTRATION 16.15 Ownership Structures/Accounting



Consolidated financial statements treat the parent and subsidiary corporations as a single economic entity. Whether or not consolidated financial statements are prepared, the parent company generally accounts for the investment in the subsidiary **using the equity method** as explained in the previous section. The accounting for consolidated financial statement can be quite complex and is discussed extensively in advanced accounting.

Accounting Matters — Who's in Control Here?

Walgreens Boots Alliance (WBA) is anchored by well-known brands Walgreens in the United States and Boots in the United Kingdom. It has a global portfolio of healthcare-focused investments, several of which are accounted for using the equity method of accounting. As you have learned, companies use the equity method of accounting for investments in which they exercise significant influence, but not control, which can be subjective. WBA discloses that it considers key factors when making this assessment, such as ownership interest, legal form of the investee, representation on the board of directors, participation in policy-making decisions, and material intra-entity transactions.

Reporting investments using the equity method of accounting allows WBA to report a single income item from the profits of its investees, along with the net investment on WBA's balance sheet. However, equity method investments are not without risk, far from it in fact. Without the ability to exercise control, WBA must rely on the internal controls and financial reporting controls of its investees. Investee failure to maintain effective standards could materially affect the financial results of WBA.

For example, one of WBA's equity method investees recently disclosed that it was involved in material litigation related to the opioid crisis. This, in turn, created additional risk for WBA and its overall financial results, which WBA disclosed in its 10-K report to investors. While companies are not required to report as much detailed information for equity method investments, they must consider the risk they carry to their organization and disclose that risk to the users of their financial reports.

Source: WBA 10-K annual report.

Put It into Practice LO 16.2/16.3 Account for Equity Investments

FACTS Potsaid Company acquired 30% of the outstanding common stock of Buyuk Inc. on December 31, 2025. The purchase price was $2,400,000 for 100,000 shares. Buyuk declared and paid a $4 per share cash dividend on June 30 and December 31, 2026. Buyuk reported net income of $1,460,000 for 2026. The fair value of Buyuk's stock was $27 per share at December 31, 2026.

INSTRUCTIONS

a. Prepare the journal entries for Potsaid for 2025 and 2026, assuming that Potsaid cannot exercise significant influence over Buyuk.

b. Prepare the journal entries for Potsaid for 2025 and 2026, assuming that Potsaid can exercise significant influence over Buyuk.

c. At what amount are the investment in securities reported on the balance sheet under each of these methods at December 31, 2026? What is the total income reported in 2026 under each of these methods?

SOLUTION

a.

December 31, 2025		
Equity Investments	2,400,000	
Cash		2,400,000
June 30, 2026		
Cash [100,000 × ($4 × .30)]	120,000	
Dividend Revenue		120,000
December 31, 2026		
Cash [100,000 × ($4 × .30)]	120,000	
Dividend Revenue		120,000
Fair Value Adjustment	300,000*	
Unrealized Holding Gain or Loss—Income		300,000

*$27 × 100,000 = $2,700,000; $2,700,000 − $2,400,000

b.

December 31, 2025		
Equity Investments (Buyuk Inc.)	2,400,000	
Cash		2,400,000
June 30, 2026		
Cash [100,000 × ($4 × .30)]	120,000	
Equity Investments (Buyuk Inc.)		120,000
December 31, 2026		
Cash [100,000 × ($4 × .30)]	120,000	
Equity Investments (Buyuk Inc.)		120,000
Equity Investments (Buyuk Inc.)	438,000	
Investment Income (.30% × $1,460,000)		438,000

c.

	Fair Value Method	Equity Method
Investment amount (balance sheet)	$2,700,000*	$2,598,000**
Dividend revenue (income statement)	$240,000	$ 0
Unrealized holding gain (income statement)	300,000	0
Investment income (income statement)		438,000
Total income	$540,000	$ 438,000

*$2,400,000 + $300,000

**$2,400,000 + $438,000 − $120,000 − $120,000

16.4 Other Financial Reporting Issues

LEARNING OBJECTIVE 4

Evaluate other major issues related to investments in debt and equity securities.

Fair Value Option

Companies have the choice to report most financial assets and financial liabilities at fair value. This choice is referred to as the **fair value option**. The following guidelines are used to report this information.

- All gains and losses related to changes in fair value are reported in net income.[11]
- This option is applied on an instrument-by-instrument basis.
- This option is generally available only at the time a company first purchases the financial asset or incurs a financial liability.
- If the company chooses to use the fair value option, it measures the financial asset or liability at fair value until the company no longer has ownership.

For example, assume that **Abbott Laboratories** purchased debt securities in 2025 that it classified as held-to-maturity. Abbott does not choose to report this security using the fair value option. In 2026, Abbott buys another held-to-maturity debt security. Abbott decides to report this security using the fair value option. Once it chooses the fair value option for the security bought in 2026, the decision is irrevocable (may not be changed). In addition, Abbott does not have the option to value the held-to-maturity security purchased in 2025 at fair value in 2026 or in subsequent periods.

Example 16.11 Fair Value Option—Available-for-Sale Security

FACTS Hardy Company purchases bonds in Fielder Company during 2025, which cost $100,000, and classified them as available-for-sale. On December 31, 2025, the fair value of these securities is $125,000.

QUESTION How should Hardy record this transaction if it chooses to use the fair value option?

SOLUTION

If Hardy chooses the fair value option to account for the Fielder company bonds, it makes the following entry at December 31, 2025.

Debt Investments	25,000	
Unrealized Holding Gain or Loss—Income		25,000

In this situation, Hardy uses the Debt Investments account to record the change in fair value at December 31. It does not use a Fair Value Adjustment account because the accounting for a fair value option is on an investment-by-investment basis rather than on a portfolio basis.

Available-for-sale debt securities are normally reported at fair value, with any unrealized gains and losses recorded as part of other comprehensive income. **Because Hardy selected the fair value option in Example 16.11, the unrealized gain or loss is recorded as part of net income and not in other comprehensive income.** Hardy also must continue to use the fair value option to record this investment until it no longer has ownership of the security.

Therefore, in subsequent periods, Hardy will report any change in fair value as an unrealized holding gain or loss. For example, if on December 31, 2026, the fair value of the debt investment is $110,000, Hardy recognizes an unrealized holding loss of $15,000 ($125,000 − $110,000) and reduces the Debt Investments account.

Companies may also use the fair value option for investments that otherwise follow the equity method of accounting.

Example 16.12 Fair Value Option—Equity Method Investments

FACTS Durham Company holds a 28% stake in Suppan Inc. Durham purchased the investment in 2025 for $930,000. At December 31, 2025, the fair value of the investment is $900,000. Durham elects to report the investment in Suppan using the fair value option.

QUESTION What entry should Durham make to record the investment under the fair value option?

SOLUTION

The entry to record this investment is as follows.

Unrealized Holding Gain or Loss—Income	30,000	
Equity Investments		30,000

In contrast to equity method accounting, if the fair value option is chosen, Durham does not report its pro rata share of the income or loss from Suppan. In addition, any dividend payments are credited to Dividend Revenue and therefore do not reduce the Equity Investments account.

[11] As indicated in our discussion of the fair value option in Chapter 13 related to liabilities, it is possible to record other comprehensive income if the change is due to deterioration of credit risk.

One major advantage of using the fair value option for this type of investment is that it addresses confusion about the equity method of accounting. In other words, what exactly does the one-line consolidation related to the equity method of accounting on the balance sheet tell investors? Many believe it does not provide information about liquidity or solvency, nor does it provide an indication of the worth of the company.

Note receivables are another financial asset for which a company can apply the fair value option.

Example 16.13 Fair Value Option—Note Receivable

FACTS Escobar Company receives a note receivable from one of its customers for $620,000 on December 31, 2025. On December 31, 2025, the fair value and carrying value of the note receivable is $620,000. Escobar decides to use the fair value option for this receivable. On December 31, 2026, the note receivable has a carrying value of $620,000, but the fair value increased to $810,000 due to a decrease in interest rates.

QUESTION How should Escobar record this transaction?

SOLUTION

Because Escobar has elected the fair value option, it reports the receivable at fair value with any unrealized holding gains and losses reported as part of net income. The unrealized holding gain is the difference between the fair value and the carrying value amount on December 31, 2026, which for Escobar is $190,000 ($810,000 - $620,000). Escobar makes the following entry to record the increase in value of the notes receivable and record the unrealized holding gain.

December 31, 2026		
Note Receivable	190,000	
Unrealized Holding Gain—Income		190,000

Escobar adds the difference between fair value and cost of the note receivable to arrive at the fair value reported on the balance sheet.

Many support the use of the fair value option as a step closer to total fair value reporting for financial instruments. They believe this treatment leads to an improvement in financial reporting. Others argue that the fair value option is confusing. A company can choose from period to period whether to use the fair value option for any new investment in a financial instrument. By permitting an instrument-by-instrument approach, companies can report some financial instruments at fair value but not others.

Accounting Matters — Fair Value Controversy

The reporting of investment securities is controversial. Some believe that all securities should be reported at fair value with the unrealized gain or loss reported in net income. Others believe the unrealized gain or loss should be reported in other comprehensive income. A third group believes all debt securities should be stated at amortized cost, and still others favor the present approach. Here are some of the major unresolved issues:

- **Measurement based on intent**. Companies classify debt securities as held-to-maturity, available-for-sale, or trading. As a result, companies can report three identical debt securities in three different ways in the financial statements. Some argue such treatment is confusing. Furthermore, the held-to-maturity category relies on intent, a subjective evaluation. What is not subjective is the fair value of the debt instrument. In other words, the three classifications are subjective, resulting in arbitrary classifications.
- **Gains trading**. Companies can classify certain debt securities as held-to-maturity and therefore report them at amortized cost. Companies can classify other debt securities as available-for-sale and report them at fair value, with the unrealized gain or loss reported as other comprehensive income. In either case, a company can become involved in "gains trading" (also referred to as "cherry picking," "snacking," or "sell the best and keep the rest"). In **gains trading**, companies sell their "winners," reporting the gains in income, and hold on to the losers.
- **Liabilities not fairly valued**. Many argue that if companies report investment securities at fair value, they also should report liabilities at fair value. Why? By recognizing changes in value on only one side of the balance sheet (the asset side), a high degree of volatility can occur in the income and stockholders' equity amounts. Further, financial institutions are involved in asset and liability management (not just asset management). Viewing only one side may lead managers to make uneconomic decisions as a result of the accounting. The fair value option may address this concern to some extent. However, there is debate on the usefulness of fair value estimates for liabilities.

Impairment of Value

Receivables

As indicated in Chapter 6 for receivables, companies use the **current expected credit loss (CECL) model** to measure impairment of receivables. To recognize the impairment, an entry is made to increase Bad Debt Expense and credit Allowance for Doubtful Accounts for the amount of the impairment. When it is probable that a company will be unable to collect all amounts due under the terms of the transaction, the receivable is permanently written off by a debit to Allowance for Doubtful Accounts and a credit to Accounts Receivable.

Debt Investments: Held-to-Maturity

The rules for debt investments (debt securities and loans) reported at amortized cost follow the same approach as discussed in Chapter 6. That is, companies should use the CECL model to record the impairment of debt investments similar to receivables. As indicated earlier, the CECL model considers both historical and current information as well as reasonable forecasts of future events.

Example 16.14
Impairment—Held-to-Maturity Security

FACTS Assume that **Chewy, Inc.** holds held-to-maturity bond securities with a par value and an amortized cost of $1,000,000. In evaluating the securities and using the CECL model, Chewy estimates that it will not collect $200,000 related to the debt investment.

QUESTION How should Chewy account for this impairment?

SOLUTION

Chewy records a debit to Bad Debt Expense and a credit to Allowance for Doubtful Accounts for $200,000 as follows.

Bad Debt Expense	200,000	
Allowance for Doubtful Accounts		200,000

The allowance will then be adjusted each period as appropriate.

Debt Investments: Available-for-Sale

Companies holding available-for-sale (AFS) debt investments follow a different approach in accounting for impairments than the CECL model. The reason is that the CECL model is designed to estimate credit losses over the contractual term of the debt investment, such as with held-to-maturity debt investments. However, if companies hold available-for-sale debt investments, they may choose to sell the securities before the contractual term ends. Therefore, companies have two choices with available-for-sale securities.

1. They may realize the value of these securities through collection of the cash flows.
2. They may realize the value of these securities by sale of the securities.

The amount of the credit losses that can be realized on available-for-sale securities is limited to the "fair value floor."[12] The fair value floor is determined as follows.

Amortized Cost of AFS Debt Security − Fair Value of AFS Debt Security = Fair Value Floor

If the expected credit loss is greater than the fair value floor, the company can sell the security and avoid the higher credit loss.

[12]In our earlier discussion related to available-for-sale investments, we assumed that these securities did not have any credit losses associated with them. As a result, unrealized gains and losses were reported in other comprehensive income. If available-for-sale investments have credit losses, they must be analyzed on an individual basis. These securities therefore cannot be combined with other available-for-sale securities to determine whether credit losses have occurred.

Example 16.15 Impairment—The Fair Value Floor

FACTS Assume that **Peleton Interactive** has an available-for-sale security with an amortized cost of $100,000, a fair value of $90,000, and an expected credit loss on this security of $15,000.

QUESTION How should Peleton account for this loss?

SOLUTION

The fair value floor is determined as $100,000 − $90,000 = $10,000 fair value floor. Peleton should record a loss of only $10,000 even though the expected credit loss is $15,000. It could sell the security for $90,000 and have a loss of only $10,000.

Illustration 16.16 provides data for an impairment analysis for available-for-sale impairment guidelines for Alexander Company.

ILLUSTRATION 16.16
Impairment Analysis, Available-for-Sale Investments

Facts	Situation A	Situation B	Situation C
Amortized cost	$1,000,000	$1,000,000	$1,000,000
Fair value	1,100,000	960,000	860,000
Expected credit loss	110,000	110,000	110,000
Expected credit loss recognized in net income	–0–	40,000	110,000
Unrealized Holding Gain or (Loss)—Equity	100,000	–0–	30,000

- **Situation A.** Alexander does not recognize an impairment loss because the fair value of $1,100,000 is higher than the amortized cost of $1,000,000. The entry Alexander makes is to record an unrealized holding gain of $100,000 ($1,100,000 − $1,000,000) in other comprehensive income.

Fair Value Adjustment	100,000	
Unrealized Holding Gain or Loss—Equity		100,000

  In this situation, Alexander does not recognize any impairment even though it has an expected credit loss of $110,000 because the fair value of its security is above its amortized cost.

- **Situation B.** Alexander recognizes an impairment loss of $40,000 ($1,000,000 − $960,000) even though the expected credit loss is $110,000. In other words, Alexander's impairment loss is limited to the fair value floor. Alexander makes the following entry to record this loss.

Bad Debt Expense	40,000	
Allowance for Doubtful Accounts		40,000

  The Allowance for Doubtful Accounts is reported on the balance sheet as an adjustment to the carrying value of the available-for-sale debt investments. An allowance account is used because after recording an impairment, events or economic conditions may change and the impairment loss may decrease (e.g., due to an improvement in the debtor's credit rating).

  In this situation, for available-for-sale investments, some or all of the previously recognized impairment loss is reversed with a debit to the allowance account (which increases the carrying value of the investment) and a credit to Bad Debt Expense. The reversal of impairment losses must not result in a carrying amount of the investment that exceeds the amortized cost that would have been reported had the impairment not been recognized.

- **Situation C.** Alexander recognizes an impairment loss of $110,000 and an unrealized holding loss through other comprehensive income of $30,000. In other words, Alexander separates the total loss of $140,000 ($1,000,000 − $860,000) into the following two components.

1. The credit loss or the amount representing the decrease in cash flows expected to be collected of $110,000.
2. The noncredit-related factors, such as changes in interest rates, market volatility, and liquidity concerns, of $30,000.

Alexander makes the following entry to record this transaction.

Bad Debt Expense	110,000	
Unrealized Holding Gain or Loss—Equity	30,000	
Allowance for Doubtful Accounts		110,000
Fair Value Adjustment		30,000

In summary, companies recognize credit losses on an available-for-sale security when the security's fair value is less than amortized cost.

Equity Investments

The accounting for impairments related to equity securities with holdings of less than 20%, **which are recorded at fair value with unrealized gains and losses through net income**, is straightforward. That is, if fair value is less than cost, the decline in value is reported through net income. As a consequence, it is not necessary to write off the individual stock investment unless a permanent impairment occurs. This same treatment applies to trading debt investments.

Illustration 16.17 provides a summary of the guidelines related to impairments.

ILLUSTRATION 16.17
Impairment Model Summary

Asset Measurement Basis	Impairment Model
Loans, receivables, and debt securities measured at amortized cost.	Expected losses recognized in net income.
Debt securities measured at fair value with gains and losses recorded in other comprehensive income (available-for-sale).	No expected credit losses recognized if fair value is greater than or equal to amortized cost. If fair value is less than amortized cost, the expected credit loss is recognized in net income. Credit losses are limited to the difference between fair value and amortized cost.
Debt (trading) and equity securities measured at fair value with gains and losses recorded in net income.	Impairment measured as the difference between the lower of amortized cost or fair value (debt securities) or lower of cost or fair value (equity securities).

Presentation of Comprehensive Income

Companies may display the components of other comprehensive income in one of two ways:

1. A combined statement of income and comprehensive income.
2. A separate statement of comprehensive income that begins with net income.

Single-Period Example

To provide a single-period example of the reporting of investment securities and related gain or loss on available-for-sale debt securities, assume that on January 1, 2025, Hinges Co. had cash and common stock of $50,000.[13] At that date, the company had no other asset, liability, or equity balance. On January 2, Hinges purchased for cash $50,000 of debt securities classified as available-for-sale. On June 30, Hinges sold part of the available-for-sale security debt portfolio, realizing a gain as shown in Illustration 16.18.

[13]We adapted this example from Dennis R. Beresford, L. Todd Johnson, and Cheri L. Reither, "Is a Second Income Statement Needed?" *Journal of Accountancy* (April 1996), p. 71.

Fair value of securities sold	$22,000
Less: Cost of securities sold	20,000
Realized gain	$ 2,000

ILLUSTRATION 16.18 Computation of Realized Gain

Hinges did not purchase or sell any other securities during 2025. It received $3,000 in interest during the year. At December 31, 2025, the remaining portfolio is as shown in **Illustration 16.19**.

Fair value of portfolio	$34,000
Less: Cost of portfolio	30,000
Unrealized gain	$ 4,000

ILLUSTRATION 16.19 Computation of Unrealized Gain

Illustration 16.20 shows the company's income statement for 2025.

Hinges Co.
Income Statement
For the Year Ended December 31, 2025

Interest revenue	$3,000
Realized gains on investment in securities	2,000
Net income	$5,000

ILLUSTRATION 16.20 Income Statement

The company reports its change in the unrealized holding gain in a statement of comprehensive income as shown in **Illustration 16.21**.

Hinges Co.
Statement of Comprehensive Income
For the Year Ended December 31, 2025

Net income (includes realized gain of $2,000)	$5,000
Other comprehensive income	
Unrealized holding gain	4,000
Comprehensive income	$9,000

ILLUSTRATION 16.21 Statement of Comprehensive Income

Illustration 16.22 shows its statement of stockholders' equity.

Hinges Co.
Statement of Stockholders' Equity
For the Year Ended December 31, 2025

	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income	Total
Beginning balance	$50,000	$–0–	$ –0–	$50,000
Add: Net income		5,000		5,000
Other comprehensive income			4,000	4,000
Ending balance	$50,000	$5,000	$4,000	$59,000

ILLUSTRATION 16.22 Statement of Stockholders' Equity

The comparative balance sheet is shown in Illustration 16.23.

ILLUSTRATION 16.23 Comparative Balance Sheet

Hinges Co.
Comparative Balance Sheet

	1/1/25	12/31/25
Assets		
Cash	$50,000	$25,000
Debt investments		34,000
Total assets	$50,000	$59,000
Stockholders' equity		
Common stock	$50,000	$50,000
Retained earnings		5,000
Accumulated other comprehensive income		4,000
Total stockholders'equity	$50,000	$59,000

This example indicates how an unrealized gain or loss on available-for-sale debt securities affects all the financial statements. Note that a company must disclose the components that comprise accumulated other comprehensive income.

Reclassification Adjustment

When a company sells securities during the year, double-counting of the realized gains or losses in comprehensive income can occur. This double-counting results when a company reports unrealized gains or losses in other comprehensive income in a **prior period** and reports these gains or losses as part of net income in the **current period**.

To ensure that gains and losses are not counted twice when a sale occurs, a **reclassification adjustment** is necessary. To illustrate, assume that Open Company has the two available-for-sale debt securities in its portfolio at the end of 2025 (its first year of operations) shown in Illustration 16.24.

ILLUSTRATION 16.24 Available-for-Sale Security Portfolio (2025)

Investments	Amortized Cost	Fair Value	Unrealized Holding Gain (Loss)
Lehman Inc. bonds 6%	$ 80,000	$105,000	$25,000
Woods Co. bonds 7%	120,000	135,000	15,000
Total of portfolio	$200,000	$240,000	40,000
Previous fair value adjustment balance			–0–
Fair value adjustment—Dr.			$40,000

The entry to record the unrealized holding gain in 2025 is as follows.

December 31, 2025

Fair Value Adjustment	40,000	
Unrealized Holding Gain or Loss—Equity		40,000

If Open Company reports net income in 2025 of $350,000, it presents a statement of comprehensive income as shown in Illustration 16.25.

ILLUSTRATION 16.25 Statement of Comprehensive Income (2025)

Open Company
Statement of Comprehensive Income
For the Year Ended December 31, 2025

Net income	$350,000
Other comprehensive income	
Unrealized holding gain	40,000
Comprehensive income	$390,000

At December 31, 2025, Open Company reports on its balance sheet debt investments of $240,000 (cost $200,000 plus fair value adjustment of $40,000) and accumulated other comprehensive income in stockholders' equity of $40,000. The closing entry to transfer the unrealized holding gain—equity to accumulated other comprehensive income is as follows.

December 31, 2025 (Closing Entry)

Unrealized Holding Gain or Loss—Equity	40,000	
Accumulated Other Comprehensive Income		40,000

On August, 10, 2026, Open Company sells its Lehman Inc. bonds for $105,000 and realizes a gain on the sale of $25,000 ($105,000 − $80,000). The journal entry to record this transaction is as follows.

August 10, 2026

Cash	105,000	
Debt Investments		80,000
Gain on Sale of Investments		25,000

At the end of 2026, the fair value of the Woods Co. bonds increased an additional $20,000 ($155,000 − $135,000), to $155,000. **Illustration 16.26** shows the computation of the change in the Fair Value Adjustment account based on only the Woods Co. investment as the Lehman bonds have been sold.

ILLUSTRATION 16.26 Available-for-Sale Security Portfolio (2026)

Investments	Cost	Fair Value	Unrealized Holding Gain (Loss)
Woods Co. bonds 7%	$120,000	$155,000	$35,000
Previous fair value adjustment balance—Dr.			(40,000)
Fair value adjustment—Cr.			$ (5,000)

The entry to record the unrealized holding gain or loss in 2026 is as follows.

December 31, 2026

Unrealized Holding Gain or Loss—Equity	5,000	
Fair Value Adjustment		5,000

Fair Value Adjustment

12/31/25	40,000		
		Adjustment	5,000
12/31/26	35,000		

If we assume that Open Company reports net income of $720,000 in 2026, including the realized sale on the Lehman bonds, its statement of comprehensive income is presented as shown in **Illustration 16.27**.

ILLUSTRATION 16.27 Statement of Comprehensive Income (2026)

Open Company
Statement of Comprehensive Income
For the Year Ended December 31, 2026

Net income (includes $25,000 realized gain on Lehman bonds)	$720,000
Other comprehensive income	
Unrealized holding loss	(5,000)
Comprehensive income	$715,000

At December 31, 2026, Open Company reports on its balance sheet debt investments of $155,000 (cost $120,000 plus a fair value adjustment of $35,000) and accumulated other comprehensive income in stockholders' equity of $35,000 ($40,000 − $5,000). The closing entry to transfer the unrealized holding loss—equity to accumulated other comprehensive income is as follows.

December 31, 2026 (Closing Entry)

Accumulated Other Comprehensive Income	5,000	
Unrealized Holding Gain or Loss—Equity		5,000

In 2025, Open included the unrealized gain on the Lehman Co. bonds in comprehensive income. In 2026, Open sold the bonds. It reported the realized gain ($25,000) in net income,

which increased comprehensive income again. To avoid double-counting this gain, Open makes a **reclassification adjustment** to eliminate the realized gain from the computation of comprehensive income in 2026.

This reclassification adjustment may be made in the income statement, in accumulated other comprehensive income, or in a note to the financial statements. The FASB prefers to show the reclassification amount in accumulated other comprehensive income in the notes to the financial statements. For Open Company, this presentation is as shown in Illustration 16.28.

ILLUSTRATION 16.28 Note Disclosure of Reclassification Adjustments

Open Company
Notes to Financial Statements
Changes in Accumulated Other Comprehensive Income

Beginning balance January 1, 2026		$40,000
Current-period other comprehensive income ($155,000 – $135,000)	$20,000*	
Amount reclassified from accumulated other comprehensive income	(25,000)	
Unrealized holding loss		(5,000)
Ending balance, December 31, 2026		$35,000

*This $20,000 measures the change in fair value (unrealized gain) on Wood's bonds from December 31, 2025, to December 31, 2026 (see Illustrations 16.26 and 16.27).

Transfers Related to Debt Securities

Companies account for transfers between any of the categories at fair value.

- If a company transfers available-for-sale debt securities to held-to-maturity investments, it records the new investments (held-to-maturity) at the date of transfer at **fair value** in the new category.
- Similarly, if it transfers held-to-maturity investments to available-for-sale debt investments, it records the new investments (available-for-sale) at **fair value**.

This **fair value** rule assures that a company cannot omit recognition of fair value simply by transferring securities to the held-to-maturity category. Illustration 16.29 summarizes the accounting treatment for transfers.

ILLUSTRATION 16.29 Accounting for Transfers of Debt Securities

Type of Transfer	Measurement Basis	Impact of Transfer on Stockholders' Equity*	Impact of Transfer on Net income*
Transfer from trading to available-for-sale	Security transferred at fair value at the date of transfer, which is the new cost basis of the security.	The unrealized gain or loss at the date of transfer increases or decreases stockholders' equity.	The unrealized gain or loss at the date of transfer is recognized in income.
Transfer from available-for-sale to trading	Security transferred at fair value at the date of transfer, which is the new cost basis of the security.	The unrealized gain or loss at the date of transfer increases or decreases stockholders' equity.	The unrealized gain or loss at the date of transfer is recognized in income.
Transfer from held-to-maturity to available-for-sale**	Security transferred at fair value at the date of transfer.	The separate component of stockholders' equity is increased or decreased by the unrealized gain or loss at the date of transfer.	None.
Transfer from available-for-sale to held-to-maturity	Security transferred at fair value at the date of transfer.	The unrealized gain or loss at the date of transfer carried as a separate component of stock holders' equity is amortized over the remaining life of the security.	None.

*Assumes that adjusting entries to report changes in fair value for the current period are not yet recorded.
**According to GAAP, these types of transfers should be rare.

Summary of Reporting Treatment of Securities

Illustration 16.30 summarizes the major debt and equity securities and their reporting treatment.[14]

ILLUSTRATION 16.30 Summary of Treatment of Major Debt and Equity Securities

Classification*	Valuation Approach and Balance Sheet Reporting	Income Effects
Debt Classifications		
Trading	Fair value. Current assets.	Interest is recognized as revenue. Unrealized holding gains and losses are recognized in income.
Available-for-sale	Fair value. Current or noncurrent assets.	Interest is recognized as revenue. Unrealized holding gains and losses are not recognized in income but in other comprehensive income.
Held-to-maturity	Amortized cost. Current or noncurrent assets.	Interest is recognized as revenue.
Equity Classifications		
Holdings less 20%	Fair value. Current or noncurrent assets.	Dividends are recognized as revenue. Unrealized gains and losses are included in income.
Holdings between 20% and 50%	Equity method. Investments originally recorded at cost with periodic adjustment for the investor's share of the investee's income or loss, and decreased by all dividends received from the investee, subsequent to the date of the investment.	Revenue is recognized to the extent of the investee's income or loss.
Holdings more than 50%	Consolidation of financial statements.	Parent and subsidiary company income or loss combined.
Nonmarketable	Cost.	Dividends are recognized as revenue.

*Companies have the option to report financial instruments at fair value with all gains and losses related to changes in fair value reported in the income statement. If a company chooses to use the fair option for some of its financial instruments, these assets or liabilities should be reported separately from other financial instruments that use a different valuation basis.

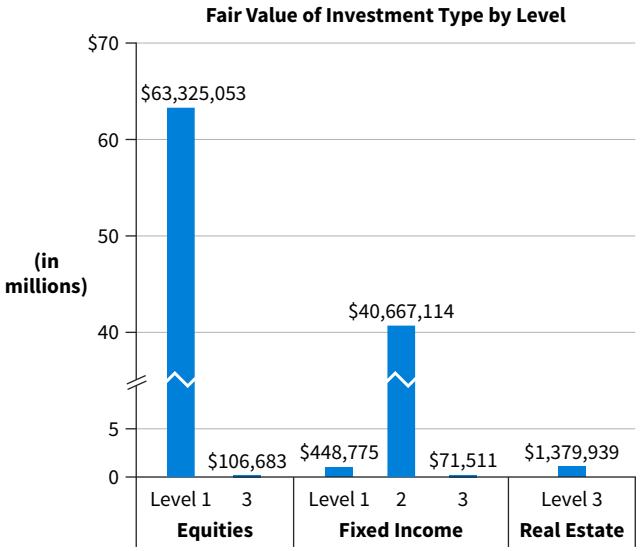
Analytics in Action: Risky Retirement

Any company with investments on its balance sheet is required to report various information about those investments, including a comparison of cost versus fair value, and the level of reliability regarding the fair value measurement. Recall that the FASB established a fair value hierarchy with Level 1 measurements being the most reliable and Level 3 being the least reliable. Now consider that you are reviewing the investment holdings of the organization that manages the assets that will fund your retirement—you may want to understand the breakdown of investments by fair value levels!

The **State of Wisconsin Investment Board (SWIB)**, responsible for managing the assets of the Wisconsin Retirement System, manages over $140 billion in assets. SWIB must disclose in its annual report its investment holdings both by type and level of fair value measurement. Analytical tools help users to best understand what types of assets SWIB is investing in and, most importantly, the reliability of the fair value measures used to report those investments.

For example, the following chart allows us to see that SWIB holds a significant amount of Level 1 equity securities while most fixed income investments are classified as Level 2. The bulks of SWIB's Level 3 assets consist of real estate investments. Note that levels not shown in the chart are not part of SWIB's holdings.

[14]Not surprisingly, the disclosure requirements for investments and other financial assets and liabilities are extensive. We provide an expanded discussion with examples of these disclosure requirements in Appendix 16B.



Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

APPENDIX **16A**

Accounting for Derivative Instruments

LEARNING OBJECTIVE *5

Describe the uses of and accounting for derivatives.

Until the early 1970s, most financial managers worked in a cozy, if unthrilling, world. Since then, constant change caused by volatile markets, new technology, and deregulation has increased the risks to businesses. In response, the financial community developed products to manage these risks.

These products—called **derivative financial instruments** or simply **derivatives**—are useful for managing risk. Companies use the fair values or cash flows of these instruments to offset the changes in fair values or cash flows of the at-risk assets. The development of powerful computing and communication technology has aided the growth in derivative use. This technology provides new ways to analyze information about markets as well as the power to process high volumes of payments.

Defining Derivatives

In order to understand derivatives, consider the following examples.

- **Example 1—Forward Contract.** Assume that a company like **Dell** believes that the price of **Google**'s stock will increase substantially in the next three months. Unfortunately, it does not have the cash resources to purchase the stock today. Dell therefore enters into a contract with a broker for delivery of 10,000 shares of Google stock in three months at the price of $110 per share.

  Dell has entered into a **forward contract**, a type of derivative. As a result of the contract, Dell **has received the right** to receive 10,000 shares of Google stock in three months. Further, it **has an obligation** to pay $110 per share at that time. What is the benefit of this derivative contract? Dell can buy Google stock today and take delivery (and make payment) in three months. If the price goes up, as it expects, Dell profits. If the price goes down, Dell loses.
- **Example 2—Option Contract.** Now suppose that Dell needs two weeks to decide whether to purchase Google stock. It therefore enters into a different type of contract,

one that gives it the right to purchase Google stock at its current price any time within the next two weeks. As part of the contract, the broker charges $3,000 for holding the contract open for two weeks at a set price.

Dell has now entered into an **option contract**, another type of derivative. As a result of this contract, **it has received the right but not the obligation** to purchase this stock. If the price of the Google stock increases in the next two weeks, Dell exercises its option. In this case, the cost of the stock is the price of the stock stated in the contract, plus the cost of the option contract. If the price does not increase, Dell does not exercise the contract but still incurs the cost for the option.

The forward contract and the option contract both involve a future delivery of stock. The value of the contract relies on the underlying asset—the Google stock. Thus, these financial instruments are known as derivatives because they **derive their value from** values of other assets (e.g., stocks, bonds, or commodities). Or, put another way, their value relates to a market-determined indicator (e.g., stock price, interest rates, or the Standard and Poor's 500 stock composite index).

In this appendix, we discuss the accounting for three different types of derivatives:

1. Financial forwards or financial futures.
2. Options.
3. Swaps.

Who Uses Derivatives, and Why?

Whether to protect for changes in interest rates, the weather, stock prices, oil prices, or foreign currencies, derivative contracts help to smooth the fluctuations caused by various types of risks. A company that wants to ensure against certain types of business risks often uses derivative contracts to achieve this objective.[15]

Producers and Consumers

To illustrate, assume that Heartland Ag is a large producer of potatoes for the consumer market. The present price for potatoes is excellent. Unfortunately, Heartland needs two months to harvest its potatoes and deliver them to the market. Because Heartland expects the price of potatoes to drop in the coming months, it signs a forward contract. It agrees to sell its potatoes today at the current market price for delivery in two months.

Who would buy this contract? Suppose on the other side of the contract is **McDonald's**. McDonald's wants to have potatoes (for French fries) in two months and believes that prices will increase. McDonald's is therefore agreeable to accepting delivery in two months at current prices. It knows that it will need potatoes in two months and that it can make an acceptable profit at this price level.

In this situation, if the price of potatoes increases before delivery, Heartland loses and McDonald's wins. Conversely, if the price decreases, Heartland wins and McDonald's loses. However, the objective is not to gamble on the outcome. Regardless of which way the price moves, both Heartland and McDonald's have received a price at which they obtain an acceptable profit. In this case, although Heartland is a **producer** and McDonald's is a **consumer**, both companies are **hedgers**. They both **hedge their positions** to ensure an acceptable financial result.

Commodity prices are volatile. They depend on weather, crop production, and general economic conditions. For the producer and the consumer to plan effectively, it makes good sense to lock in specific future revenues or costs in order to run their businesses successfully.

Speculators and Arbitrageurs

In some cases, instead of McDonald's taking a position in the forward contract, a speculator may purchase the contract from Heartland. The **speculator** bets that the price of potatoes will rise, thereby increasing the value of the forward contract. The speculator, who may be in the

[15]Derivatives are traded on many exchanges throughout the world. In addition, many derivative contracts (primarily interest rate swaps) are privately negotiated.

market for only a few hours, will then sell the forward contract to another speculator or to a company like McDonald's.

Arbitrageurs also use derivatives. These market players attempt to exploit inefficiencies in markets. They seek to lock in profits by simultaneously entering into transactions in two or more markets. For example, an arbitrageur might trade in a futures contract. At the same time, the arbitrageur will also trade in the commodity underlying the futures contract, hoping to achieve small price gains on the difference between the two. Markets rely on speculators and arbitrageurs to keep the market liquid on a daily basis.

In these illustrations, we explained why Heartland (the producer) and McDonald's (the consumer) would become involved in a derivative contract. Consider other types of situations that companies face.

1. Airlines, like **Delta**, **Southwest**, and **United**, are affected by changes in the price of jet fuel.
2. Financial institutions, such as **Citigroup**, **Bankers Trust**, and **BMO Harris**, are involved in borrowing and lending funds that are affected by changes in interest rates.
3. Multinational corporations, like **Cisco Systems**, **Coca-Cola**, and **General Electric**, are subject to changes in foreign exchange rates.

In fact, most corporations are involved in some form of derivatives transactions. Companies give these reasons (in their annual reports) as to why they use derivatives:

1. **ExxonMobil** uses derivatives to hedge its exposure to fluctuations in interest rates, foreign currency exchange rates, and hydrocarbon prices.
2. **Caterpillar** uses derivatives to manage foreign currency exchange rates, interest rates, and commodity price exposure.
3. **Johnson & Johnson** uses derivatives to manage the impact of interest rate and foreign exchange rate changes on earnings and cash flows.

Many corporations use derivatives extensively and successfully. However, derivatives can be dangerous. All parties involved must understand the risks and rewards associated with these contracts.[16]

Basic Principles in Accounting for Derivatives

The FASB concluded that derivatives such as forwards and options are assets and liabilities. It also concluded that companies should report them in the balance sheet **at fair value**.[17] The Board believes that fair value will provide statement users the best information about derivatives. Relying on some other basis of valuation for derivatives, such as historical cost, does not make sense. Why? Because many derivatives have a historical cost of zero. Furthermore, the markets for derivatives, and the assets upon which derivatives' values rely, are well developed. As a result, the Board believes that companies can determine reliable fair value amounts for derivatives.[18]

[16]There are some well-publicized examples of companies that have suffered considerable losses using derivatives. For example, companies such as **Fannie Mae** (U.S.), **Enron** (U.S.), **Showa Shell Sekiyu** (Japan), **Metallgesellschaft** (Germany), **Procter & Gamble** (U.S.), and **Air Products & Chemicals** (U.S.) incurred significant losses from investments in derivative instruments.

[17]GAAP covers accounting and reporting for all derivative instruments, whether financial or not. In this appendix, we place greater focus on derivative financial instruments because of their widespread use in practice. **[7]**

[18]As discussed in earlier chapters, fair value is defined as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." Fair value is therefore a market-based measure. As discussed in Chapter 1, the FASB has also developed a fair value hierarchy, which indicates the priority of valuation techniques to use to determine fair value. **Level 1** fair value measures are based on observable inputs that reflect quoted prices for identical assets or liabilities in active markets. **Level 2** measures are based on inputs other than quoted prices included in Level 1 but that can be corroborated with observable data. **Level 3** fair values are based on unobservable inputs (for example, a company's own data or assumptions). Thus, Level 1 is the most reliable because it is based on quoted prices, like a closing stock price in the *Wall Street Journal.* Level 2 is the next most reliable and would rely on evaluating similar assets or liabilities in active markets. For Level 3 (the least reliable), much judgment is needed, based on the best information available, to arrive at a relevant and reliable fair value measurement. **[8]**

On the income statement, a company should recognize any unrealized gain or loss in income, if it uses the derivative for speculation purposes. If using the derivative for hedging purposes, the accounting for any gain or loss depends on the type of hedge used. We discuss the accounting for hedged transactions later in the appendix.

In summary, companies follow these guidelines in accounting for derivatives.

1. Recognize derivatives in the financial statements as assets and liabilities.
2. Report derivatives at fair value.
3. Recognize gains and losses resulting from speculation in derivatives immediately in income.
4. Report gains and losses resulting from hedge transactions differently, depending on the type of hedge.

Example of Derivative Financial Instrument—Speculation

To illustrate the measurement and reporting of a derivative for speculative purposes, we examine a derivative whose value depends on the market price of Laredo Inc. common stock. A company can realize a gain from the increase in the value of the Laredo shares with the use of a derivative, such as a call option.[19] A **call option** gives the holder the right, but not the obligation, to buy shares at a preset price. This price is often referred to as the **strike price** or the **exercise price**.

For example, assume a company enters into a call option contract with Baird Investment Co., which gives it the option to purchase Laredo stock at $100 per share.[20] If the price of Laredo stock increases above $100, the company can exercise this option and purchase the shares for $100 per share. If Laredo's stock never increases above $100 per share, the call option is worthless.

Accounting Entries To illustrate the accounting for a call option, assume that the company purchases a call option contract on January 2, 2025, when Laredo shares are trading at $100 per share. The contract gives it the option to purchase 1,000 shares (referred to as the **notional amount**) of Laredo stock at an option price of $100 per share. The option expires on April 30, 2025. The company purchases the call option for $400 and makes the following entry.

	January 2, 2025		
Call Option		400	
Cash			400

This payment is referred to as the **option premium**. It is generally much less than the cost of purchasing the shares directly. The option premium consists of two amounts: (1) intrinsic value and (2) time value. The following formula is used to compute the option premium.

Option Premium = Intrinsic Value + Time Value

- **Intrinsic value** is the difference between the market price and the preset strike price at any point in time. It represents the amount realized by the option holder, if exercising the option immediately. On January 2, 2025, the intrinsic value is zero because the market price equals the preset strike price.

[19] Investors can use a different type of option contract—a **put option**—to realize a gain if anticipating a decline in the Laredo stock value. A put option gives the holder the option to sell shares at a preset price. Thus, a put option **increases** in value when the underlying asset **decreases** in value.

[20] Baird Investment Co. is referred to as the **counterparty**. Counterparties frequently are investment bankers or other companies that hold inventories of financial instruments.

- **Time value** refers to the option's value over and above its intrinsic value. Time value reflects the possibility that the option has a fair value greater than zero. How? Because there is some expectation that the price of Laredo shares will increase above the strike price during the option term. As indicated, the time value for the option is $400.[21]

The following additional data are available with respect to the call option.

Date	Market Price of Laredo Shares	Time Value of Call Option
March 31, 2025	$120 per share	$100
April 16, 2025	115 per share	60

As indicated, on March 31, 2025, the price of Laredo shares increases to $120 per share. The intrinsic value of the call option contract is now $20,000. That is, the company can exercise the call option and purchase 1,000 shares from Baird Investment for $100 per share. It can then sell the shares in the market for $120 per share. This gives the company a gain of $20,000 ($120,000 − $100,000) on the option contract.[22] It records the increase in the intrinsic value of the option as follows.

March 31, 2025

Call Option	20,000	
Unrealized Holding Gain or Loss—Income		20,000

A market appraisal indicates that the time value of the option at March 31, 2025, is $100.[23] The company records this change in value of the option as follows.

March 31, 2025

Unrealized Holding Gain or Loss—Income	300	
Call Option ($400 − $100)		300

At March 31, 2025, the company reports the call option in its balance sheet at fair value of $20,100.[24] The unrealized holding gain increases net income for the period. The loss on the time value of the option decreases net income.

On April 16, 2025, the company settles the option before it expires. To properly record the settlement, it updates the value of the option for the decrease in the intrinsic value of $5,000 [($120 − $115) × 1,000] as follows.

April 16, 2025

Unrealized Holding Gain or Loss—Income	5,000	
Call Option		5,000

The decrease in the time value of the option of $40 ($100 − $60) is recorded as follows.

Call Option

1/2/25	400	3/31/25	300
3/31/25	20,000	4/16/25	5,000
		4/16/25	40
Balance	15,060		

April 16, 2025

Unrealized Holding Gain or Loss—Income	40	
Call Option		40

Thus, at the time of the settlement, the call option's carrying value is $15,060.

[21]This value is estimated using option-pricing models, such as the Black-Scholes equation. The volatility of the underlying stock, the expected life of the option, the risk-free rate of interest, and expected dividends on the underlying stock during the option term affect the Black-Scholes fair value estimate.

[22]In practice, investors generally do not have to actually buy and sell the Laredo shares to settle the option and realize the gain. This is referred to as the **net settlement feature of option contracts**.

[23]The decline in value reflects both the decreased likelihood that the Laredo shares will continue to increase in value over the option period and the shorter time to maturity of the option contract.

[24]As indicated earlier, the total value of the option at any point in time equals the intrinsic value plus the time value.

The company records the settlement of the option contract with Baird as follows.

April 16, 2025		
Cash	15,000	
Loss on Settlement of Call Option	60	
Call Option		15,060

Illustration 16A.1 summarizes the effects of the call option contract on net income.

ILLUSTRATION 16A.1 Effect on Income—Derivative Financial Instrument

Date	Transaction	Income (Loss) Effect
March 31, 2025	Net increase in value of call option ($20,000 − $300)	$19,700
April 16, 2025	Decrease in value of call option ($5,000 + $40)	(5,040)
April 16, 2025	Settle call option	(60)
	Total net income	$14,600

The accounting summarized in Illustration 16A.1 is in accord with GAAP. That is, because the call option meets the definition of an asset, the company records it in the balance sheet on March 31, 2025. Furthermore, it reports the call option at fair value, with any gains or losses reported in income.

Differences Between Traditional and Derivative Financial Instruments

How does a traditional financial instrument differ from a derivative one? A derivative financial instrument has the following three basic characteristics. [9]

1. **The instrument has (1) one or more underlyings and (2) an identified payment provision.** An **underlying** is a specified interest rate, security price, commodity price, index of prices or rates, or other market-related variable. The interaction of the underlying, with the face amount or the number of units specified in the derivative contract (the notional amounts), determines payment. For example, the value of the call option increased in value when the value of the Laredo stock increased. In this case, the underlying is the stock price. To arrive at the payment provision, multiply the change in the stock price by the number of shares (notional amount).
2. **The instrument requires little or no investment at the inception of the contract.** To illustrate, the company paid a small premium to purchase the call option—an amount much less than if purchasing the Laredo shares as a direct investment.
3. **The instrument requires or permits net settlement.** As indicated in the call option example, the company could realize a profit on the call option without taking possession of the shares. This **net settlement** feature reduces the transaction costs associated with derivatives.

Illustration 16A.2 summarizes the differences between traditional and derivative financial instruments. Here, we use a trading security for the traditional financial instrument and a call option as an example of a derivative one.

ILLUSTRATION 16A.2 Features of Traditional and Derivative Financial Instruments

Feature	Traditional Financial Instrument (Trading Security)	Derivative Financial Instrument (Call Option)
Payment provision	Stock price times the number of shares.	Change in stock price (underlying) times number of shares (notional amount).
Initial investment	Investor pays full cost.	Initial investment is much less than full cost.
Settlement	Deliver stock to receive cash.	Receive cash equivalent, based on changes in stock price times the number of shares.

Derivatives Used for Hedging

LEARNING OBJECTIVE *6

Explain the accounting for hedges.

Flexibility in use and the low-cost features of derivatives relative to traditional financial instruments explain the popularity of derivatives. An additional use for derivatives is in risk management. For example, companies such as **Coca-Cola**, **ExxonMobil**, and **General Electric** borrow and lend substantial amounts in credit markets. In doing so, they are exposed to significant **interest rate risk**. That is, they face substantial risk that the fair values or cash flows of interest-sensitive assets or liabilities will change if interest rates increase or decrease. These same companies also have significant international operations. As such, they are also exposed to **exchange rate risk**—the risk that changes in foreign currency exchange rates will negatively impact the profitability of their international businesses.

- Companies can use derivatives to offset the negative impacts of changes in interest rates or foreign currency exchange rates.
- This use of derivatives is referred to as **hedging**.

GAAP established accounting and reporting standards for derivative financial instruments used in hedging activities. The FASB allows special accounting for two types of hedges—fair value and cash flow hedges.[25]

Fair Value Hedge

In a **fair value hedge**, a company uses a derivative to hedge (offset) the exposure to changes in the fair value of a recognized asset or liability or of an unrecognized commitment. In a perfectly hedged position, the gain or loss on the fair value of the derivative equals and offsets that of the hedged asset or liability.

To illustrate a fair value hedge, assume that on December 1, 2025, Hayward Tire Fabricators, Inc. holds an inventory of 1,000 tractor tires, with a cost of $200 per tire. Hayward has been building an inventory of tractor tires in anticipation of demand for these tires in the upcoming spring planting season. Hayward records the inventory on its balance sheet at $200,000 (1,000 × $200), using lower-of-FIFO-cost-or-net realizable value.

Illustration 16A.3 indicates how Hayward reports the tire inventory in its balance sheet at December 31, 2025, assuming none of the tires have been sold.

ILLUSTRATION 16A.3 Balance Sheet Presentation of Inventory

Hayward Tire Fabricators, Inc.
Balance Sheet (partial)
December 31, 2025

Current assets	
Inventory	$200,000

Hayward could benefit from an increase in the price of tires (based on realized gross profit on tire sales). But until it sells the tires, the company is exposed to the risk that the value of the tire inventory will decline. Hayward wishes to hedge its exposure to fair value declines for its tire inventory (the inventory is pledged as collateral for one of its bank loans).

[25] GAAP also addresses the accounting for certain foreign currency hedging transactions. In general, these transactions are special cases of the two hedges we discuss here. [10] Understanding of foreign currency hedging transactions requires knowledge related to consolidation of multinational entities, which is beyond the scope of this text.

To hedge this risk, Hayward locks in the value of its tire inventory on January 2, 2026, by purchasing a put option to sell rubber at a fixed price. Hayward designates the option as a fair value hedge of the tire inventory. This put option (which expires in two years) gives Hayward the option to sell 4,000 pounds of rubber at a price of $50 per pound, which is the current spot price for rubber in the market. Since the exercise price equals the current market price, no entry is necessary at inception of the put option.[26]

January 2, 2026

No entry required. A memorandum indicates the signing of the put option contract and its designation as a fair value hedge for the tire inventory.

At March 31, 2026, the fair value of the inventory has declined by 10%. Hayward records the following entry for the tire inventory.

March 31, 2026

Unrealized Holding Gain or Loss—Income ($200,000 × .10)	20,000	
Allowance to Reduce Inventory to Fair Value		20,000

Note that upon designation of the hedge, the accounting for the inventory fair value change deviates from regular GAAP.[27] That is, Hayward records an unrealized holding loss in income, even though it has not yet sold the inventory. **If Hayward had not followed this accounting, a mismatch of gains and losses in the income statement would result.** Thus, special accounting for the hedged item (in this case, the tire inventory) is necessary in a fair value hedge.

The following journal entry records the increase in value of the put option to sell rubber, assuming that the spot price for rubber declined by 10%.

March 31, 2026

Put Option	20,000	
Unrealized Holding Gain or Loss—Income		20,000

The decline in the spot price of rubber results in an increase in the fair value of the put option. That is, Hayward could realize a gain on the put option, by purchasing 4,000 pounds of rubber in the open market for $45 (.90 × $50), and then exercise the put option, selling the rubber for $50 per pound. This results in a gain to Hayward of $20,000 (4,000 pounds × $5).[28]

Illustration 16A.4 indicates how Hayward reports the amounts related to the Inventory and the put option.

Hayward Tire Fabricators. Inc.
Balance Sheet (partial)
March 31, 2026

Current assets	
Inventory (net of the allowance of $20,000)	$180,000
Put option	20,000

ILLUSTRATION 16A.4 Balance Sheet Presentation of Fair Value Hedge

As indicated, the increase in fair value on the option offsets or hedges the decline in value of Hayward's tire inventory.

[26]To simplify the example, we assume no premium is paid for the option. A put option on rubber is a good candidate for this hedge because the rubber raw material is the primary driver of fair value changes on tires.

[27]The accounting for inventory is discussed in Chapters 7 and 8. In this example, the inventory is not subject to a lower-of-cost-or-net realizable value assessment.

[28]In practice, Hayward generally does not have to actually buy and sell the rubber in the commodity market to realize this gain. Rather, unless the counterparty wants to hold the rubber, Hayward can "close out" the contract by having the counterparty pay it $20,000 in cash. This is an example of the net settlement feature of derivatives.

- By using fair value accounting for both the inventory and the put option, the financial statements reflect the underlying substance of Hayward's net exposure to the risks of holding the inventory.
- That is, the balance sheet reports the amount that Hayward would receive for the inventory and the put option contract if Hayward sold and settled them, respectively.

Illustration 16A.5 indicates the reporting of the effects of the hedging transaction on income for the quarter ended March 31, 2026.

ILLUSTRATION 16A.5 Income Statement Presentation of Fair Value Hedge

Hayward Tire Fabricators, Inc. Income Statement (partial) For the Quarter Ended March 31, 2026	
Other income	
Unrealized holding gain—put option	$20,000
Unrealized holding loss—inventory	(20,000)

The income statement indicates that the gain on the put option offsets the loss on the inventory.[29] The reporting for these financial instruments, even when they reflect a hedging relationship, illustrates why the FASB argues that fair value accounting provides the most relevant information about financial instruments, including derivatives.

Cash Flow Hedge

Companies use **cash flow hedges** to hedge exposures to **cash flow risk**, which results from the variability in cash flows. The FASB allows special accounting for cash flow hedges. Generally, companies measure and report derivatives at fair value on the balance sheet. They report gains and losses directly in net income.

- Companies account for derivatives used in cash flow hedges at fair value on the balance sheet.
- They **record gains or losses in equity**, **as part of other comprehensive income**.

To illustrate, assume that in September 2025, Allied Can Co. anticipates purchasing 1,000 metric tons of aluminum in January 2026. Concerned that prices for aluminum will increase in the next few months, Allied wants to hedge the risk that it might pay higher prices for inventory in January 2026. As a result, Allied enters into an aluminum futures contract.

A **futures contract** gives the holder the right and the obligation to purchase an asset at a preset price for a specified period of time.[30] In this case, the aluminum futures contract gives Allied the right and the obligation to purchase 1,000 metric tons of aluminum for $1,550 per ton. This contract price is good until the contract expires in January 2026. The underlying for this derivative is the price of aluminum. If the price of aluminum rises above $1,550, the value of the futures contract to Allied increases. Why? Because Allied will be able to purchase the aluminum at the lower price of $1,550 per ton.[31]

Allied enters into the futures contract on September 1, 2025. Assume that the price to be paid today for inventory to be delivered in January—the **spot price**—equals the contract price. With the two prices equal, the futures contract has no value. Therefore, no entry is necessary.

September 2025

No entry required. A memorandum indicates the signing of the futures contract.

[29]Note that the fair value changes in the option contract will not offset **increases** in the value of the Hayward inventory. Should the price of rubber increase above $50 per pound, Hayward would have no incentive to exercise the put option.

[30]A **futures contract** is a firm contractual agreement between a buyer and seller for a specified asset on a fixed date in the future which also trades on an exchange. The contract also has a standard specification so both parties know exactly what is being traded. A **forward** is similar but is not traded on an exchange and does not have standardized conditions.

[31]As with the earlier call option example, the actual aluminum does not have to be exchanged. Rather, the parties to the futures contract settle by paying the cash difference between the futures price and the price of aluminum on each settlement date.

At December 31, 2025, the price for January delivery of aluminum increases to $1,575 per metric ton. Allied makes the following entry to record the increase in the value of the futures contract.

December 31, 2025

Futures Contract	25,000	
Unrealized Holding Gain or Loss—Equity [($1,575 − $1,550) × 1,000 tons]		25,000

Allied reports the futures contract in the balance sheet as a current asset. It reports the gain on the futures contract as part of other comprehensive income.

- Since Allied has not yet purchased and sold the inventory, this gain arises from an **anticipated transaction**.
- In this type of transaction, **a company accumulates in equity gains or losses on the futures contract as part of other comprehensive income until the period in which it sells the inventory, thereby affecting earnings**.

In January 2026, Allied purchases 1,000 metric tons of aluminum for $1,575 and makes the following entry.[32]

January 2026

Aluminum Inventory	1,575,000	
Cash ($1,575 × 1,000 tons)		1,575,000

At the same time, Allied makes final settlement on the futures contract. It records the following entry.

January 2026

Cash	25,000	
Futures Contract ($1,575,000 − $1,550,000)		25,000

Through use of the futures contract derivative, Allied fixes the cost of its inventory. The $25,000 futures contract settlement offsets the amount paid to purchase the inventory at the prevailing market price of $1,575,000. The result: net cash outflow of $1,550 per metric ton, as desired. As **Illustration 16A.6** shows, Allied has therefore effectively hedged the cash flow for the purchase of inventory.

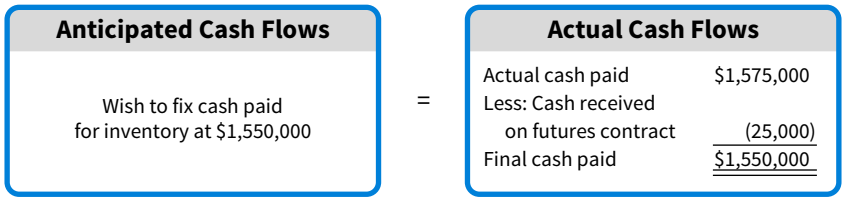

Anticipated Cash Flows
Wish to fix cash paid for inventory at $1,550,000
=
Actual Cash Flows
Actual cash paid $1,575,000
Less: Cash received on futures contract (25,000)
Final cash paid $1,550,000

ILLUSTRATION 16A.6 Effect of Hedge on Cash Flows

There are no income effects at this point. Allied accumulates in equity the gain on the futures contract as part of other comprehensive income until the period when it sells the inventory, affecting earnings through cost of goods sold.

For example, assume that Allied processes the aluminum into finished goods (cans). The total cost of the cans (including the aluminum purchases in January 2026) is $1,700,000. Allied sells the cans in July 2026 for $2,000,000, and records this sale as follows.

July 2026

Cash	2,000,000	
Sales Revenue		2,000,000
Cost of Goods Sold	1,700,000	
Inventory (cans)		1,700,000

[32]In practice, futures contracts are settled on a daily basis. For our purposes, we show only one settlement for the entire amount.

Since the effect of the anticipated transaction has now affected earnings, Allied makes the following entry related to the hedging transaction.

July 2026		
Unrealized Holding Gain or Loss—Equity	25,000	
Cost of Goods Sold		25,000

The gain on the futures contract, which Allied reported as part of other comprehensive income, now reduces cost of goods sold. As a result, the cost of aluminum included in the overall cost of goods sold is $1,550,000. The futures contract has worked as planned. Allied has managed the cash paid for aluminum inventory and the amount of cost of goods sold.

Other Reporting Issues

LEARNING OBJECTIVE *7

Identify special reporting issues related to derivative financial instruments that cause unique accounting problems.

The preceding examples illustrate the basic reporting issues related to the accounting for derivatives. Next, we discuss the following additional issues.

1. The accounting for embedded derivatives.
2. Qualifying hedge criteria.

Embedded Derivatives

As we indicated at the beginning of this appendix, rapid innovation in the development of complex financial instruments drove efforts toward unifying and improving the accounting standards for derivatives. In recent years, this innovation has led to the development of **hybrid securities**. These securities have characteristics of both debt and equity. They often combine traditional and derivative financial instruments.

For example, a convertible bond is a hybrid instrument. It consists of two parts:

1. A debt security, referred to as the **host security**.
2. An option to convert the bond to shares of common stock, the **embedded derivative**.

To provide consistency in accounting for similar derivatives, a company must account for embedded derivatives similarly to other derivatives.

Therefore, to account for an embedded derivative, a company **should separate it from the host security** and then account for it using the accounting for derivatives. This separation process is referred to as **bifurcation**.[33] Thus, a company investing in a convertible bond must separate the stock option component of the instrument. It then accounts for the derivative (the stock option) at fair value and the host instrument (the debt) according to GAAP, as if there were no embedded derivative.[34]

Qualifying Hedge Criteria

The FASB identified certain criteria that hedging transactions must meet before requiring the special accounting for hedges. The FASB designed these criteria to ensure the use of hedge

[33]A company can also designate such a derivative as a hedging instrument. The company would apply the hedge accounting provisions outlined earlier in the chapter.

[34]The issuer of the convertible bonds would not bifurcate the option component of the convertible bonds payable. GAAP explicitly precludes embedded derivative accounting for an embedded derivative that is indexed to a company's own common stock. If the conversion feature was tied to **another company's** stock, then the derivative would be bifurcated.

accounting in a consistent manner across different hedge transactions. The general criteria relate to the following areas.

1. **Documentation, risk management, and designation**. At inception of the hedge, there must be formal **documentation** of the hedging relationship, the company's **risk management** objective, and the strategy for undertaking the hedge. **Designation** refers to identifying the hedging instrument, the hedged item or transaction, the nature of the risk being hedged, and how the hedging instrument will offset changes in the fair value or cash flows attributable to the hedged risk.

   The FASB decided that documentation and designation are critical to the implementation of the special accounting for hedges. Without these requirements, companies might try to apply the hedge accounting provisions retroactively, only in response to negative changes in market conditions, to offset the negative impact of a transaction on the financial statements. Allowing special hedge accounting in such a setting could mask the speculative nature of the original transaction.

2. **Effectiveness of the hedging relationship.** At inception and on an ongoing basis, the hedging relationship should be **highly effective** in achieving offsetting changes in fair value or cash flows. Companies must assess effectiveness whenever preparing financial statements.

   The general guideline for effectiveness is that the fair values or cash flows of the hedging instrument (the derivative) and the hedged item exhibit a high degree of correlation. In practice, high effectiveness is assumed when the correlation is close to one (e.g., within plus or minus 10%). In our earlier hedging examples (put option and the futures contract on aluminum inventory), the fair values and cash flows are perfectly correlated. That is, when the cash payment for the inventory purchase increased, it offset, dollar for dollar, the cash received on the futures contract.

   If the effectiveness criterion is not met, either at inception or because of changes following inception of the hedging relationship, the FASB no longer allows special hedge accounting. The company should then account for the derivative as a free-standing derivative.[35]

3. **Effect on reported earnings of changes in fair values or cash flows**. A change in the fair value of a hedged item or variation in the cash flow of a hedged forecasted transaction must have the potential to change the amount recognized in reported earnings.[36] There is no need for special hedge accounting if a company accounts for both the hedging instrument and the hedged item at fair value under existing GAAP. In this case, earnings will properly reflect the offsetting gains and losses.

   For example, special accounting is not needed for a fair value hedge of a trading security, because a company accounts for both the investment and the derivative at fair value on the balance sheet with gains or losses reported in earnings. Thus, "special" hedge accounting is necessary only when there is a mismatch of the accounting effects for the hedging instrument and the hedged item under GAAP.[37]

Summary of Derivatives Accounting

Illustration 16A.7 summarizes the accounting provisions for derivatives and hedging transactions.

[35]That is, the accounting for the part of a derivative that is not effective in a hedge is at fair value, with gains and losses recorded in income.

[36]GAAP gives companies the option to measure most types of financial instruments—from equity investments to debt issued by the company—at fair value. Changes in fair value are recognized in net income each reporting period. Thus, GAAP provides companies with the opportunity to hedge their financial instruments without the complexity inherent in applying hedge accounting provisions. For example, if the fair value option is used, bifurcation of an embedded derivative is not required. **[11]**

[37]An important criterion specific to cash flow hedges is that the forecasted transaction in a cash flow hedge "is likely to occur." A company should support this probability (defined as significantly greater than the term "more likely than not") by observable facts such as frequency of similar past transactions and its financial and operational ability to carry out the transaction.

ILLUSTRATION 16A.7 Summary of Derivative Accounting Under GAAP

Derivative Use	Accounting for Derivative	Accounting for Hedged item	Common Example
Speculation	At fair value with unrealized holding gains and losses recorded in income.	Not applicable.	Call or put optionon an equity security.
Hedging—Fair value	At fair value with holding gains and losses recorded in income.	At fair value with gains and losses recorded in income.	Put option to hedge inventory.
Hedging—Cash flow	At fair value with unrealized holding gains and losses from the hedge recorded in other comprehensive income, and reclas sified in income when the hedged transac tion's cash flows affect earnings.	Use other GAAP for the hedged item.	Use of a futures contract to hedge a forecasted purchase of inventory.

As indicated, the general accounting for derivatives relies on fair values. GAAP also establishes special accounting guidance when companies use derivatives **for hedging purposes**. For example, when a company uses a put option to hedge price changes in inventory in a fair value hedge (see the Hayward example earlier), it records unrealized gains on the investment in earnings, which is not GAAP for inventory without such a hedge. This special accounting is justified in order to accurately report the nature of the hedging relationship in the balance sheet (recording both the put option and the inventory at fair value) and in the income statement (reporting offsetting gains and losses in the same period).

Special accounting also is used for cash flow hedges. Companies account for derivatives used in qualifying cash flow hedges at fair value on the balance sheet, but record unrealized holding gains or losses in other comprehensive income until selling or settling the hedged item. In a cash flow hedge, a company continues to record the hedged item at its historical cost.

Disclosure requirements for derivatives are complex. Recent pronouncements on fair value information and financial instruments provide a helpful disclosure framework for reporting derivative instruments. Appendix 16B illustrates many of these disclosures, except for discussion of hedging issues. In general, companies that have derivatives are required to disclose the objectives for holding or issuing those instruments (speculation or hedging), the hedging context (fair value or cash flow), and the strategies for achieving risk-management objectives.

Comprehensive Hedge Accounting Example

To provide a comprehensive example of hedge accounting, we examine the use of an interest rate swap. First, let's consider how swaps work and why companies use them.

Options and futures trade on organized securities exchanges. Because of this, options and futures have standardized terms. Although that standardization makes the trading easier, it limits the flexibility needed to tailor contracts to specific circumstances. In addition, most types of derivatives have relatively short time horizons, thereby excluding their use for reducing long-term risk exposure.

As a result, many corporations instead turn to the swap, a very popular type of derivative.

- A **swap** is a transaction between two parties in which the first party promises to make a payment to the second party. Similarly, the second party promises to make a simultaneous payment to the first party.
- The most common type of swap is the **interest rate swap**. In this type, one party makes payments based on a fixed or floating rate, and the second party does just the opposite. In most cases, large money-center banks bring together the two parties. These banks handle the flow of payments between the parties, as shown in **Illustration 16A.8**.

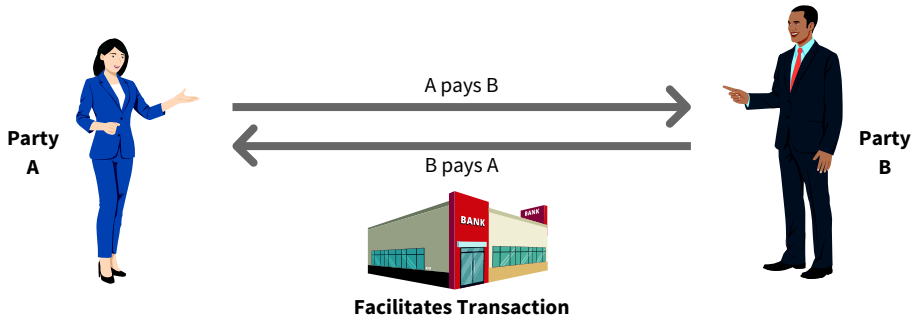


ILLUSTRATION 16A.8 Swap Transaction

Fair Value Hedge

To illustrate the use of a swap in a fair value hedge, assume that Jones Company issues $1,000,000 of five-year, 8% bonds on January 2, 2025. Jones records this transaction as follows.

January 2, 2025

Cash	1,000,000	
Bonds Payable		1,000,000

Jones offered a fixed interest rate to appeal to investors. But Jones is concerned that if market interest rates decline, the fair value of the liability will increase. The company will then suffer an economic loss.[38] To protect against the risk of loss, Jones hedges the risk of a decline in interest rates by entering into a five-year interest rate swap contract. Jones agrees to the following terms.

1. Jones will receive fixed payments at 8% (based on the $1,000,000 amount).
2. Jones will pay variable rates, based on the market rate in effect for the life of the swap contract. The variable rate at the inception of the contract is 6.8%.

As **Illustration 16A.9** shows, this swap allows Jones to change the interest on the bonds payable from a fixed rate to a variable rate.

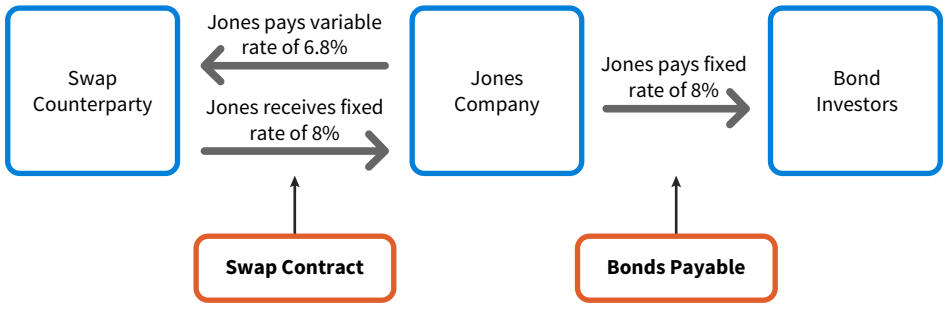


ILLUSTRATION 16A.9 Interest Rate Swap

The settlement dates for the swap correspond to the interest payment dates on the debt (December 31). On each interest payment (settlement) date, Jones and the counterparty compute the difference between current market interest rates and the fixed rate of 8%, and determine the value of the swap.[39] If interest rates decline, the value of the swap contract to Jones increases (Jones has a gain), while at the same time Jones's fixed-rate debt obligation increases (Jones has an economic loss).

[38]This economic loss arises because Jones is locked into the 8% interest payments even if rates decline.

[39]The underlying for an interest rate swap is some index of market interest rates. The most commonly used index is the London Interbank Offer Rate, or LIBOR. In this example, we assume the LIBOR is 6.8%.

The swap is an effective risk-management tool in this setting. Its value relates to the same underlying (interest rates) that will affect the value of the fixed-rate bond payable. Thus, if the value of the swap goes up, it offsets the loss related to the debt obligation.

Assuming that Jones enters into the swap on January 2, 2025 (the same date as the issuance of the debt), the swap at this time has no value. Therefore, no entry is necessary.

January 2, 2025

No entry required. A memorandum indicates the signing of the swap contract.

At the end of 2025, Jones makes the interest payment on the bonds. It records this transaction as follows.

December 31, 2025

Interest Expense	80,000	
Cash (.08 × $1,000,000)		80,000

At the end of 2025, market interest rates have declined substantially. Therefore, the value of the swap contract increases. Recall (see Illustration 16A.8) that in the swap, Jones receives a fixed rate of 8%, or $80,000 ($1,000,000 × .08), and pays a variable rate (6.8%), or $68,000. Jones therefore receives $12,000 ($80,000 − $68,000) as a settlement payment on the swap contract on the first interest payment date. Jones records this transaction as follows.

December 31, 2025

Cash	12,000	
Interest Expense		12,000

In addition, a market appraisal indicates that the value of the interest rate swap has increased $40,000. Jones records this increase in value as follows.[40]

December 31, 2025

Swap Contract	40,000	
Unrealized Holding Gain or Loss—Income		40,000

Jones reports this swap contract in the balance sheet. It reports the gain on the hedging transaction in the income statement. Because interest rates have declined, the company records a loss and a related increase in its liability as follows.

December 31, 2025

Unrealized Holding Gain or Loss—Income	40,000	
Bonds Payable		40,000

Jones reports the loss on the hedging activity in net income. It adjusts bonds payable in the balance sheet to fair value (which deviates from normal accounting at amortized cost).

Financial Statement Presentation of an Interest Rate Swap

Illustration 16A.10 indicates how Jones reports the asset and liability related to this hedging transaction on the balance sheet.

ILLUSTRATION 16A.10 Balance Sheet Presentation of Fair Value Hedge

Jones Company
Balance Sheet (partial)
December 31, 2025

Current assets	
Swap contract	$40,000
Long-term liabilities	
Bonds payable	$1,040,000

[40] Theoretically, this fair value change reflects the present value of expected future differences in variable and fixed interest rates.

The effect on Jones's balance sheet is the addition of the swap asset and an increase in the carrying value of the bonds payable. **Illustration 16A.11** indicates how Jones reports the effects of this swap transaction in the income statement.

ILLUSTRATION 16A.11 Income Statement Presentation of Fair Value Hedge

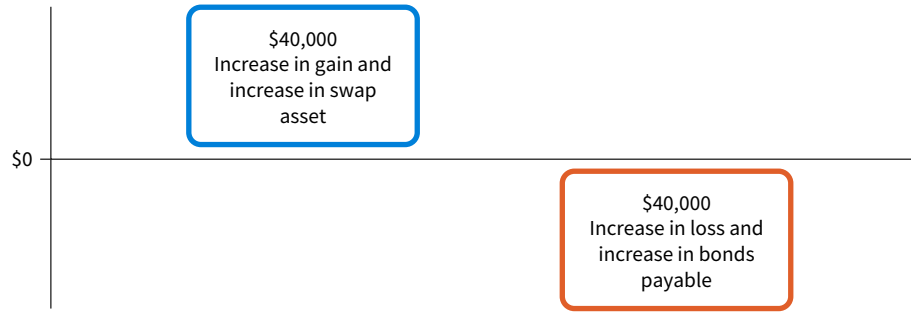
Jones Company
Income Statement (partial)
For the Year Ended December 31, 2025

Interest expense ($80,000 − $12,000)		$68,000
Other income		
Unrealized holding gain—swap contract	$ 40,000	
Unrealized holding loss—bonds payable	(40,000)	
Net gain (loss)		–0–

On the income statement, Jones reports interest expense of $68,000. Jones has effectively changed the debt's interest rate from fixed to variable. That is, by receiving a fixed rate and paying a variable rate on the swap, the company converts the fixed rate on the bond payable to variable. This results in an effective-interest rate of 6.8% in 2025.[41] Also, the gain on the swap offsets the loss related to the debt obligation. Therefore, the net gain or loss on the hedging activity is zero.

Illustration 16A.12 shows the overall impact of the swap transaction on the financial statements.

ILLUSTRATION 16A.12 Impact on Financial Statements of Fair Value Hedge



In summary, to account for fair value hedges (as illustrated in the Jones example) **record the derivative at its fair value in the balance sheet, and record any gains and losses in income**. Thus, the gain on the swap offsets or hedges the loss on the bond payable, due to the decline in interest rates.

By adjusting the hedged item (the bond payable in the Jones case) to fair value, with the gain or loss recorded in earnings, the accounting for the Jones bond payable deviates from amortized cost. This special accounting is justified in order to report accurately the nature of the hedging relationship between the swap and the bond payable in the balance sheet (both the swap and the debt obligation are recorded at fair value) and in the income statement (offsetting gains and losses are reported in the same period).[42]

[41] Jones will apply similar accounting and measurement at future interest payment dates. Thus, if interest rates increase, Jones will continue to receive 8% on the swap (records a loss) but will also be locked into the fixed payments to the bondholders at an 8% rate (records a gain).

[42] An interest rate swap can also be used in a cash flow hedge. A common setting is the cash flow risk inherent in having variable rate debt as part of a company's debt structure. In this situation, the variable debt issuer can hedge the cash flow risk by entering into a swap contract to receive variable rate cash flows but pay fixed rate. The cash received on the swap contract will offset the variable cash flows to be paid on the debt obligation.

Controversy and Concluding Remarks

Companies need rules to properly measure and report derivatives in financial statements. However, some argue that reporting derivatives at fair value results in unrealized gains and losses that are difficult to interpret. Others raise concerns about the complexity and cost of implementing GAAP in this area.

However, we believe that the long-term benefits of reporting derivatives at fair value far outweigh any implementation costs. As the volume and complexity of derivatives and hedging transactions continue to grow, so does the risk that investors and creditors will be exposed to unexpected losses arising from derivative transactions. Statement readers must have comprehensive information concerning many derivative financial instruments and the effects of hedging transactions using derivatives.

APPENDIX **16B**

Fair Value Disclosures

LEARNING OBJECTIVE *8

Describe required fair value disclosures.

As indicated in the chapter, the FASB believes that fair value information is relevant for making effective business decisions. However, others express concern about fair value measurements for two reasons:

1. The lack of reliability related to the fair value measurement in certain cases.
2. The ability to manipulate fair value measurements to achieve financial results inconsistent with the underlying economics of the situation.

The Board recognizes these concerns and has attempted to develop a sound conceptual basis for measuring and reporting fair value information.

In addition, the Board has placed emphasis on developing guidelines for reporting fair value information for financial instruments because many of these instruments have relatively active markets for which valuations can be reliably determined. The purpose of this appendix is to explain the disclosure requirements for financial instruments related to fair value information.

Disclosure of Fair Value Information: Financial Instruments

One requirement related to fair value disclosure is that both the cost and the fair value of all financial instruments be reported in the notes to the financial statements. [12] This enables readers of the financial statements to understand the fair value of the company's financial instruments and the potential gains and losses that might occur in the future as a result of these instruments.

The Board also decided that companies should disclose information that enables users to determine the extent of usage of fair value and the inputs used to implement fair value

measurement. Two reasons for additional disclosure beyond the simple itemization of fair values are:

1. **Differing levels of reliability exist in the measurement of fair value information**. It therefore is important to understand the varying risks involved in measurement. It is difficult to incorporate these levels of uncertainty into the financial statements. Disclosure provides a framework for addressing the qualitative aspects related to risk and measurement.
2. **Changes in the fair value of financial instruments are reported differently in the financial statements, depending on the type of financial instrument involved and whether the fair value option is employed.** Note disclosure provides an opportunity to explain more precisely the impact that changes in the value of financial instruments have on financial results. In assessing the inputs, the Board recognizes that the reliability of the fair value measurement is of extreme importance. Many financial instruments are traded in active markets, and their valuation is not difficult. Other instruments are complex/illiquid, and their valuation is difficult.

To highlight these levels of reliability in valuation, the FASB established a fair value hierarchy. As discussed in Chapter 1, this hierarchy identifies three broad levels—1, 2, and 3—related to the measurement of fair values.

- Level 1 is the most reliable measurement because fair value is based on quoted prices in active markets **for identical assets or liabilities**.
- Level 2 is less reliable; it is not based on quoted market prices for identical assets and liabilities but instead may be based on **similar assets or liabilities**.
- Level 3 is least reliable; it uses unobservable inputs that reflect the company's assumption as to the value of the financial instrument.

Illustration 16B.1 is an example of a fair value note disclosure for Sabathia Company. It includes both the fair value amounts and the reliability level. (A similar disclosure would be presented for liabilities.)

ILLUSTRATION 16B.1 Example of Fair Value Hierarchy

Sabathia Company
Notes to the Financial Statements

($ in 000s)	Fair Value Measurements at Reporting Data Using			
Description	Fair Value 12/31/25	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable inputs (Level 2)	Significant Unobservable inputs (Level 3)
Trading securities	$115	$105	$10	
Available-for-sale securities	75	75		
Derivatives	60	25	15	$20
Venture capital investments	10			10
Total	$260	$205	$25	$30

For assets and liabilities measured at fair value and classified as Level 3, a reconciliation of Level 3 changes for the period is required. In addition, companies should report an analysis of how Level 3 changes in fair value affect total gains and losses and their impact on net income. **Illustration 16B.2** is an example of this disclosure.

ILLUSTRATION 16B.2
Reconciliation of Level 3 Inputs

Sabathia Company
Notes to the Financial Statements

($ in 000s)	Fair Value Measurements Using Significant Unobservable Input (Level 3)		
	Derivatives	Venture Capital Investments	Total
Beginning balance	$14	$11	$25
Total gains or losses (realized/unrealized)			
Included in earnings (or changes in net assets)	11	(3)	8
Included in other comprehensive income	4		4
Purchases, issuances, and settlements	(7)	2	(5)
Transfers in and/or out of Level 3	(2)		(2)
Ending balance	$20	$10	$30
The amount or total gains or losses for the period included in earnings (or changes in net assets) attributable to the change in unrealized gains or losses relating to assets still held at the reporting date	$7	$2	$9

Gains and losses (realized and unrealized) included in earnings (or changes in net assets) for the period (above) are reported in trading revenues and in other revenues as follows.

	Trading Revenues	Other Revenues
Total gains or losses included in earnings (or changes in net assets) for the period (as shown in the table above)	$11	$(3)
Change in unrealized gains or losses relating to assets still held at reporting date	$7	$2

Sabathia Company's disclosure provides to the user of the financial statements an understanding of the following.

1. The carrying amount and the fair value of the company's financial instruments segregated by level of reliability. Thus, the reader of the financial statements has a basis for judging what credence should be given to the fair value amounts.
2. For Level 3 financial instruments, a reconciliation of the balance from the beginning to the end of the period. This reconciliation enables the reader to understand the composition of the change. It is important because these calculations are most affected by subjective estimates and could be subject to manipulation.
3. The impact of changes in fair value on the net assets of the company from one period to the next.

For companies that choose to use the **fair value option** for some or all of their financial instruments [13], they are permitted to incorporate the entire guidelines related to fair value measurement into one master schedule, or they can provide in a separate schedule information related solely to the fair value option.

Finally, companies must provide the following (with special emphasis on Level 3 measurements):

1. Quantitative information about significant unobservable inputs used for all Level 3 measurements.
2. A qualitative discussion about the sensitivity of recurring Level 3 measurements to changes in the unobservable inputs disclosed, including interrelationships between inputs.
3. Any transfers between Levels 1 and 2 of the fair value hierarchy.
4. Information about nonfinancial assets measured at fair value at amounts that differ from the assets' highest and best use.
5. The proper hierarchy classification for items that are not recognized on the balance sheet but are disclosed in the notes to the financial statements.

A typical disclosure related to Level 3 fair value measurements is presented in Illustration 16B.3.

ILLUSTRATION 16B.3 Quantitative Information about Level 3 Fair Value Measurements

($ in millions)	Fair Value at 12/31/2025	Valuation Technique(s)	Unobservable Input	Range (Weighted-Average)
Residential mortgage-backed securities	125	Discounted cash flow	Constant prepayment rate Probability of default Loss severity	3.5%–5.5% (4.5%) 5%–50% (10%) 40%–100% (60%)
Collateralized debt obligations	35	Consensus pricing	Offered quotes Comparability adjustments (%)	20–45 −10%–+15% (+5%)
Direct venture capital investments: Healthcare	53	Discounted cash flow	Weighted-average cost of capital Long term revenue growth rate Long term pretax operating margin Discount for lack of marketability[a] Control premium[a]	7%–16% (12.1%) 2%–5% (4.2%) 3%–20% (10.3%) 5%–20% (17%) 10%–30% (20%)
		Market-comparable companies	EBITDA multiple[b] Revenue multiple[b] Discount for lack of marketability[a] Control premium[a]	6.5–12 (9.5) 1.0–3.0 (2.0) 5%–20% (10%) 10%–20% (12%)
Credit contracts	38	Option model	Annualized volatility of credit[c] Counterparty credit risk[d] Own credit risk[d]	10%–20% 0.5%–3.5% 0.3%–2.0%

[a]Represents amounts used when the reporting entity has determined that market participants would take into account these premiums and discounts when pricing the investments.
[b]Represents amounts used when the reporting entity has determined that market participants would use such multiples when pricing the investments.
[c]Represents the range of the volatility curves used in the valuation analysis that the reporting entity has determined market participants would use when pricing the contracts.
[d]Represents the range of the credit default swap spread curves used in the valuation analysis that the reporting entity has determined market participants would use when pricing the contracts.
(**Note:** For liabilities, a similar table should be presented.)

Disclosure of Fair Values: Impaired Assets or Liabilities

In addition to financial instruments, companies often have assets or liabilities that are remeasured on a nonrecurring basis due to impairment. In this case, the fair value hierarchy can highlight the reliability of the measurement, coupled with the related gain or loss for the period. Illustration 16B.4 highlights this disclosure for McClung Company.

McClung Company
Notes to the Financial Statements

($ in millions)	Fair Value Measurements Using			
Description	Year Ended 12/31/25	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Long lived assets held and used	$75	–	$75	–
Goodwill	30	–	–	$30
Long-lived assets held for sale	26	–	26	–

Long-lived assets held and used with a carrying amount of $100 million were written down to their fair value of $75 million, resulting in an impairment charge of $25 million, which was included in earnings for the period.

Goodwill with a carrying amount of $65 million was written down, resulting in an impairment charge of $35 million, which was included in earnings for the period.

In accordance with the provisions of the impairment or Disposal of Long-Lived Assets Subsections of FASB Codification Subtopic 360-10, long lived assets held for sale with a carrying amount of $35 million were written down to their fair value of $26 million, less cost to sell of $6 million (or $20 million), resulting in a loss of $15 million, which was included in earnings for the period.

ILLUSTRATION 16B.4 Disclosure of Fair Value, with Impairment

Conclusion

With recent joint FASB and IASB standard-setting efforts, we now have convergence with respect to fair value measurement, both in terms of the definition and measurement guidelines when fair value is the measurement approach in GAAP and IFRS. In addition, GAAP and IFRS have similar fair value disclosure requirements, as illustrated in this appendix. As the former chair of the IASB noted, this "marks the completion of a major convergence project and is a fundamentally important element of our joint response to the global crisis. The result is clearer and more consistent guidance on measuring fair value, where its use is already required."[43]

Review and Practice

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Learning Objectives Review

1 Describe the accounting for investments in debt securities.

(1) Carry and report **held-to-maturity debt securities** at amortized cost. (2) Value **trading debt securities** for reporting purposes at fair value, with unrealized holding gains or losses included in net income. (3) Value **available-for-sale debt securities** for reporting purposes at fair value, with unrealized holding gains or losses reported as other comprehensive income and as a separate component of stockholders' equity.

2 Describe the accounting for investments in equity securities.

The degree to which one corporation (investor) acquires an interest in the common stock of another corporation (investee) generally determines the accounting treatment for the investment. Long-term investments by one corporation in the common stock of another can be classified according to the percentage of the voting stock of the investee held by the investor.

[43]The FASB continues to evaluate standards to improve existing disclosure requirements related to fair value measurement. For example, in Accounting Standards Update (ASU 2016-01), the FASB requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (e.g., securities or loans and receivables) on the balance sheet or in the accompanying notes to the financial statements.

3 Explain the equity and consolidation methods of accounting.

Under the **equity method**, the investor and the investee acknowledge a substantive economic relationship. The company originally records the investment at cost but subsequently adjusts the amount each period for changes in the net assets of the investee. That is, the investor's proportionate share of the earnings (losses) of the investee periodically increases (decreases) the investment's carrying amount. All dividends received by the investor from the investee decrease the investment's carrying amount.

Under the **fair value method**, a company reports the equity investment at fair value each reporting period irrespective of the investee's earnings or dividends paid to it. A company applies the equity method to investment holdings between 20% and 50% of ownership. It applies the fair value method to holdings below 20%. Equity investments with holdings greater than 50% are accounted for using consolidation procedures.

4 Evaluate other major issues related to investments in debt and equity securities.

Fair value option. Companies have the option to report most financial instruments at fair value, with all gains and losses related to changes in fair value reported in the income statement. This option is applied on an instrument-by-instrument basis. The fair value option is generally available only at the time a company first purchases the financial asset or incurs a financial liability. If a company chooses to use the fair value option, it must measure this instrument at fair value until the company no longer has ownership.

Impairments. Refer to Illustration 16.17 for a summary of the guidelines related to impairments.

Reclassifications. A company needs a reclassification adjustment when it reports realized gains or losses as part of net income but also shows the amounts as part of other comprehensive income in the current or in previous periods. Companies should report unrealized holding gains or losses related to available-for-sale securities in other comprehensive income and the aggregate balance as accumulated comprehensive income on the balance sheet.

Transfers. Transfers of securities between categories of investments should be accounted for at fair value, with unrealized holding gains or losses treated in accordance with the nature of the transfer.

*5 Describe the uses of and accounting for derivatives.

Any company or individual that wants to protect against different types of business risks may use derivative contracts to achieve this objective. In general, these transactions involve some type of hedge. Speculators also use derivatives, attempting to find an enhanced return. Speculators are very important to the derivatives market because they keep it liquid on a daily basis. Arbitrageurs attempt to exploit inefficiencies in various derivative contracts. A company primarily uses derivatives for purposes of hedging its exposure to fluctuations in interest rates, foreign currency exchange rates, and commodity prices.

Companies should recognize derivatives in the financial statements as assets and liabilities, and report them at fair value. Companies should recognize gains and losses resulting from speculation immediately in income. They report gains and losses resulting from hedge transactions in different ways, depending on the type of hedge.

Companies report derivative financial instruments in the balance sheet and record them at fair value. Except for derivatives used in cash flow hedges, companies record realized and unrealized gains and losses on derivative financial instruments in income.

*6 Explain the accounting for hedges.

Fair value hedges. A company records the derivative used in a qualifying fair value hedge at its fair value in the balance sheet, recording any gains and losses in income. In addition, the company also accounts for the item being hedged with the derivative at fair value. By adjusting the hedged item to fair value, with the gain or loss recorded in earnings, the accounting for the hedged item may deviate from GAAP in the absence of a hedge relationship. This special accounting is justified in order to report accurately the nature of the hedging relationship between the derivative hedging instruments and the hedged item. A company reports both in the balance sheet, reporting offsetting gains and losses in income in the same period.

Cash flow hedge. Companies account for derivatives used in qualifying cash flow hedges at fair value on the balance sheet, but record gains or losses in equity as part of other comprehensive income. Companies accumulate these gains or losses, and reclassify them in income when the hedged transaction's cash flows affect earnings. Accounting is according to GAAP for the hedged item.

*7 Identify special reporting issues related to derivative financial instruments that cause unique accounting problems.

A company should separate a derivative that is embedded in a hybrid security from the host security and account for it using the accounting for derivatives. This separation process is referred to as **bifurcation**. Special hedge accounting is allowed only for hedging relationships that meet certain criteria. The main criteria are as follows. (1) There is formal documentation of the hedging relationship, the company's risk-management objective, and the strategy for undertaking the hedge, and the company designates the derivative as either a cash flow or fair value hedge. (2) The company expects the hedging relationship to be highly effective in achieving offsetting changes in fair value or cash flows. (3) "Special" hedge accounting is necessary only when there is a mismatch of the accounting effects for the hedging instrument and the hedged item under GAAP.

*8 Describe required fair value disclosures.

The FASB has developed required fair value disclosures in response to concerns about the reliability of fair value measures. Disclosure elements include fair value amounts and reliability levels as well as impaired assets or liabilities.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. Distinguish between a debt security and an equity security.

2. What purpose does the variety in bond features (types and characteristics) serve?

3. What is the cost of a long-term investment in bonds?

4. Identify and explain the three types of classifications for investments in debt securities.

5. When should a debt security be classified as held-to-maturity?

6. Explain how trading debt securities are accounted for and reported.

7. At what amount should trading, available-for-sale, and held-to-maturity debt securities be reported on the balance sheet?

8. On July 1, 2025, Wheeler Company purchased $4,000,000 of Duggen Company's 8% bonds, due on July 1, 2032. The bonds, which pay interest semiannually on January 1 and July 1, were purchased for $3,500,000 to yield 10%. Determine the amount of interest revenue Wheeler should report on its income statement for the year ended December 31, 2025.

9. If the bonds in Question 8 are classified as available-for-sale and they have a fair value at December 31, 2025, of $3,604,000, prepare the journal entry (if any) at December 31, 2025, to record this transaction.

10. Indicate how unrealized holding gains and losses should be reported for debt investments classified as trading, available-for-sale, and held-to-maturity.

11. (a) Assuming no Fair Value Adjustment account balance at the beginning of the year, prepare the adjusting entry at the end of the year if Laura Company's available-for-sale debt securities have a fair value $60,000 below cost. (b) Assume the same information as part (a), except that Laura Company has a debit balance in its Fair Value Adjustment account of $10,000 at the beginning of the year. Prepare the adjusting entry at year-end.

12. Identify and explain the different types of classifications for investments in equity securities.

13. Why are held-to-maturity investments applicable only to debt securities?

14. Hayes Company sold 10,000 shares of Kenyon Co. common stock for $27.50 per share, incurring $1,770 in brokerage commissions. These securities originally cost $260,000. Prepare the entry to record the sale of these securities.

15. Distinguish between the accounting treatment for marketable versus nonmarketable equity securities.

16. What constitutes "significant influence" when an investor's financial interest is below the 50% level?

17. Explain how the investment account is affected by investee activities under the equity method.

18. Your classmate Kate believes that the equity method is applied with a strict application of the "20%" rule. Do you agree? Explain.

19. Hiram Co. uses the equity method to account for investments in common stock. What accounting should be made for dividends received from these investments subsequent to the date of investment?

20. Raleigh Corp. has an investment with a carrying value (equity method) on its books of $170,000 representing a 30% interest in Borg Company, which suffered a $620,000 loss this year. How should Raleigh Corp. handle its proportionate share of Borg's loss?

21. Where on the asset side of the balance sheet are debt investments classified as trading securities, available-for-sale securities, and held-to-maturity securities reported? Explain.

22. Explain why reclassification adjustments are necessary.

23. Briefly discuss how a transfer of securities from the available-for-sale category to the trading category affects stockholders' equity and income.

24. Explain how to account for the impairment of a held-to-maturity debt security.

25. Explain how to account for the impairment of an available-for-sale debt investment.

26. What is the GAAP definition of fair value?

27. What is the fair value option?

28. Franklin Corp. has a debt investment that it has held for several years. When it purchased the debt investment, Franklin classified and accounted for it as available-for-sale. Can Franklin use the fair value option for this investment? Explain.

***29.** What is meant by the term "underlying" as it relates to derivative financial instruments?

***30.** What are the main distinctions between a traditional financial instrument and a derivative financial instrument?

***31.** What is the purpose of a fair value hedge?

***32.** In what situation will the unrealized holding gain or loss on inventory be reported in income?

***33.** Why might a company become involved in an interest rate swap contract to receive fixed interest payments and pay variable?

***34.** What is the purpose of a cash flow hedge?

***35.** Where are gains and losses related to cash flow hedges involving anticipated transactions reported?

***36.** What are hybrid securities? Give an example of a hybrid security.

Brief Exercises

BE16.1 (LO 1) Garfield Company purchased, on January 1, 2025, as a held-to-maturity investment, $80,000 of the 9%, 5-year bonds of Chester Corporation for $74,086, which provides an 11% return. Prepare Garfield's journal entries for (a) the purchase of the investment, and (b) the receipt of annual interest and discount amortization. Assume effective-interest amortization is used.

BE16.2 (LO 1) Use the information from BE16.1 but assume the bonds are purchased as an available-for-sale security. Prepare Garfield's journal entries for (a) the purchase of the investment, (b) the receipt of annual interest and discount amortization, and (c) the year-end fair value adjustment. (Assume a zero balance in the Fair Value Adjustment account.) The bonds have a year-end fair value of $75,500.

BE16.3 (LO 1) Carow Corporation purchased on January 1, 2025, as a held-to-maturity investment, $60,000 of the 8%, 5-year bonds of Harrison, Inc. for $65,118, which provides a 6% return. The bonds pay interest semiannually. Prepare Carow's journal entries for (a) the purchase of the investment, and (b) the receipt of semiannual interest and premium amortization. Assume effective-interest amortization is used.

BE16.4 (LO 1) Hendricks Corporation purchased trading investment bonds for $50,000 at par. At December 31, Hendricks received annual interest of $2,000, and the fair value of the bonds was $47,400. Prepare Hendricks' journal entries for (a) the purchase of the investment, (b) the interest received, and (c) the fair value adjustment. (Assume a zero balance in the Fair Value Adjustment account.)

BE16.5 (LO 2) Fairbanks Corporation purchased 400 shares of Sherman Inc. common stock for $13,200 (Fairbanks does not have significant influence). During the year, Sherman paid a cash dividend of $3.25 per share. At year-end, Sherman stock was selling for $34.50 per share. Prepare Fairbanks' journal entries to record (a) the purchase of the investment, (b) the dividends received, and (c) the fair value adjustment. (Assume a zero balance in the Fair Value Adjustment account.)

BE16.6 (LO 2) Use the information from BE16.5 but assume the stock is nonmarketable. Prepare Fairbanks' journal entries to record (a) the purchase of the investment, (b) the dividends received, and (c) the fair value adjustment, if any.

BE16.7 (LO 3) Zoop Corporation purchased for $300,000 a 30% interest in Murphy, Inc. This investment enables Zoop to exert significant influence over Murphy. During the year, Murphy earned net income of $180,000 and paid dividends of $60,000. Prepare Zoop's journal entries related to this investment.

BE16.8 (LO 2) Cleveland Company has a stock portfolio valued at $4,000. Its cost was $3,300. If the Fair Value Adjustment account has a debit balance of $200, prepare the journal entry at year-end.

BE16.9 (LO 2, 4) The following information relates to Moran Co. for the year ended December 31, 2025: net income $1,245.7 million; unrealized holding loss of $10.9 million related to available-for-sale debt securities during the year; accumulated other comprehensive income of $57.2 million on December 31, 2024. Assuming no other changes in accumulated other comprehensive income, determine (a) other comprehensive income for 2025, (b) comprehensive income for 2025, and (c) accumulated other comprehensive income at December 31, 2025.

BE16.10 (LO 4) Hillsborough Co. has a held-to-maturity investment in the bonds of Schuyler Corp. with a carrying value of $70,000. Hillsborough determined that due to poor economic prospects for Schuyler, the bonds have decreased in value to $60,000. It is determined that this loss in value is uncollectible. Prepare the journal entry, if any, to record the reduction in value.

BE16.11 (LO 4) Presented below are two independent cases related to available-for-sale debt investments.

	Case 1	Case 2
Amortized cost	$40,000	$100,000
Fair value	30,000	110,000
Expected credit losses	25,000	92,000

For each case, determine the amount of impairment loss, if any.

BE16.12 (LO 4) Stave Company invests $10,000,000 in 5% fixed rate corporate bonds on January 1, 2025. All the bonds are classified as available-for-sale and are purchased at par. At year-end, market interest rates have declined, and the fair value of the bonds is now $10,600,000. Interest is paid on January 1. Prepare journal entries for Stave Company to (a) record the transactions related to these bonds in 2025, assuming Stave does not elect the fair option; and (b) record the transactions related to these bonds in 2025, assuming that Stave Company elects the fair value option to account for these bonds.

BE16.13 (LO 4) Michek Company loans Sarasota Company $2,000,000 at 6% for 3 years on January 1, 2025. Michek intends to hold this loan to maturity and has the financial ability to do so. The fair value of the loan at the end of each reporting period is as follows.

December 31, 2025	$2,050,000
December 31, 2026	2,020,000
December 31, 2027	2,000,000

Prepare the journal entry (entries) at December 31, 2025, and December 31, 2027, for Michek related to these bonds, assuming (a) it does not use the fair value option, and (b) it uses the fair value option. Interest is paid on January 1.

Exercises

E16.1 (LO 1, 2) (Investment Classifications) For the following investments, identify whether they are:

1. Trading debt securities.
2. Available-for-sale debt securities.
3. Held-to-maturity debt securities.
4. None of the above.

Each case is independent of the other.

a. A bond that will mature in 4 years was bought 1 month ago when the price dropped. As soon as the value increases, which is expected next month, it will be sold.

b. 10% of the outstanding stock of Farm-Co was purchased. The company is planning on eventually getting a total of 30% of its outstanding stock.

c. Bonds were purchased in December of this year. The bonds are expected to be sold in January of next year.

d. Bonds that will mature in 5 years are purchased. The company would like to hold them until they mature, but money has been tight recently and they may need to be sold.

e. Preferred stock was purchased for its constant dividend. The company is planning to hold the preferred stock for a long time.

f. A bond that matures in 10 years was purchased. The company has committed the money for an expansion project planned 10 years from now.

E16.2 (LO 1) Excel (Entries for Held-to-Maturity Securities) On January 1, 2025, Dagwood Company purchased at par 6% bonds having a maturity value of $300,000. They are dated January 1, 2025, and mature January 1, 2030, with interest received on January 1 of each year. The bonds are classified in the held-to-maturity category.

Instructions

a. Prepare the journal entry at the date of the bond purchase.

b. Prepare the journal entry to record the interest revenue on December 31, 2025.

c. Prepare the journal entry to record the interest received on January 1, 2026.

E16.3 (LO 1) (Entries for Held-to-Maturity Securities) On January 1, 2025, Hi and Lois Company purchased 12% bonds having a maturity value of $300,000 for $322,744.44. The bonds provide the bondholders with a 10% yield. They are dated January 1, 2025, and mature January 1, 2030, with interest received on January 1 of each year. Hi and Lois Company uses the effective-interest method to allocate unamortized discount or premium. The bonds are classified in the held-to-maturity category.

Instructions

a. Prepare the journal entry at the date of the bond purchase.

b. Prepare a bond amortization schedule.

c. Prepare the journal entry to record the interest revenue and the amortization at December 31, 2025.

d. Prepare the journal entry to record the interest revenue and the amortization at December 31, 2026.

E16.4 (LO 1) (Entries for Available-for-Sale Securities) Assume the same information as in E16.3 except that the securities are classified as available-for-sale. The fair value of the bonds at December 31 of each year-end is as follows.

2025	$320,500	2028	$310,000
2026	$309,000	2029	$300,000
2027	$308,000		

Instructions

a. Prepare the journal entry at the date of the bond purchase.

b. Prepare the journal entries to record the interest revenue and recognition of fair value for 2025.

c. Prepare the journal entry to record the recognition of fair value for 2026.

E16.5 (LO 1) Excel **(Effective-Interest versus Straight-Line Bond Amortization)** On January 1, 2025, Phantom Company acquires $200,000 of Spiderman Products, Inc., 9% bonds at a price of $185,589. Interest is received on January 1 of each year, and the bonds mature on January 1, 2028. The investment will provide Phantom Company a 12% yield. The bonds are classified as held-to-maturity.

Instructions

a. Prepare a 3-year schedule of interest revenue and bond discount amortization, applying the straight-line method.

b. Prepare a 3-year schedule of interest revenue and bond discount amortization, applying the effective-interest method.

c. Prepare the journal entry for the interest revenue and discount amortization under the straight-line method at December 31, 2026.

d. Prepare the journal entry for the interest revenue and discount amortization under the effective-interest method at December 31, 2026.

E16.6 (LO 2) **(Entries for Equity Securities)** The following information is available for Barkley Company at December 31, 2025, regarding its investments.

Securities	Cost	Fair Value
3,000 shares of Myers Corporation common stock	$40,000	$48,000
1,000 shares of Cole Incorporated preferred stock	25,000	22,000
	$65,000	$70,000

Instructions

a. Prepare the adjusting entry (if any) for 2025, assuming no balance in the Fair Value Adjustment account at January 1, 2025. Neither of Barkley's investments result in significant influence.

b. Discuss how the amounts reported in the financial statements are affected by the entries in (a).

E16.7 (LO 2) **(Equity Securities Entries)** On December 21, 2025, Bucky Katt Company provided you with the following information regarding its equity investments.

Investments	Cost	Fair Value	Unrealized Gain (Loss)
Clemson Corp. stock	$20,000	$19,000	$(1,000)
Colorado Co. stock	10,000	9,000	(1,000)
Buffaloes Co. stock	20,000	20,600	600
Total of portfolio	$50,000	$48,600	(1,400)
Previous fair value adjustment balance			–0–
Fair value adjustment—Cr.			$(1,400)

During 2026, Colorado Co. stock was sold for $9,400. The fair value of the stock on December 31, 2026, was Clemson Corp. stock—$19,100; Buffaloes Co. stock—$20,500. None of the equity investments result in significant influence.

Instructions

a. Prepare the adjusting journal entry needed on December 31, 2025.

b. Prepare the journal entry to record the sale of the Colorado Co. stock during 2026.

c. Prepare the adjusting journal entry needed on December 31, 2026.

E16.8 (LO 2) **(Equity Securities Entries and Reporting)** Satchel Corporation purchases equity securities costing $73,000. At December 31, the fair value of the portfolio is $65,000.

Instructions

Prepare the adjusting entry to report the securities properly, assuming that the investments purchased represent less than a 5% interest in the other companies. Indicate the statement presentation of the accounts in your entry.

E16.9 (LO 1) (Available-for-Sale Debt Securities Entries and Financial Statement Presentation) At December 31, 2025, the available-for-sale debt portfolio for Steffi Graf, Inc. is as follows.

Security	Cost	Fair Value	Unrealized Gain (Loss)
A	$17,500	$15,000	($2,500)
B	12,500	14,000	1,500
C	23,000	25,500	2,500
Total	$53,000	$54,500	1,500
Previous fair value adjustment balance—Dr.			400
Fair value adjustment—Dr.			$1,100

On January 20, 2026, Steffi Graf, Inc. sold security A for $15,100. The sale proceeds are net of brokerage fees.

Instructions

a. Prepare the adjusting entry at December 31, 2025, to report the portfolio at fair value.

b. Show the balance sheet presentation of the investment-related accounts at December 31, 2025 (Ignore notes presentation.)

c. Prepare the journal entry for the 2026 sale of security A.

E16.10 (LO 4) (Comprehensive Income Disclosure) Assume the same information as E16.9 and that Steffi Graf, Inc. reports net income in 2025 of $120,000 and in 2026 of $140,000. Unrealized holding gains or losses equal $40,000 in 2026.

Instructions

a. Prepare a statement of comprehensive income for 2025, starting with net income.

b. Prepare a statement of comprehensive income for 2026, starting with net income.

E16.11 (LO 2) (Equity Securities Entries) Aranda Corporation made the following cash purchases of securities during 2025, which is the first year in which Aranda invested in securities.

1. On January 15, purchased 10,000 shares of Sanchez Company's common stock at $33.50 per share plus commission $1,980.
2. On April 1, purchased 5,000 shares of Vicario Co.'s common stock at $52.00 per share plus commission $3,370.
3. On September 10, purchased 7,000 shares of WTA Co.'s preferred stock at $26.50 per share plus commission $4,910.

On May 20, 2025, Aranda sold 4,000 shares of Sanchez Company's common stock at a market price of $35 per share less brokerage commissions, taxes, and fees of $3,850. The year-end fair values per share were Sanchez $30, Vicario $55, and WTA $28. In addition, the chief accountant of Aranda told you that the corporation plans to hold these securities for the long-term but may sell them in order to earn profits from appreciation in prices. The equity method of accounting is not appropriate for these stock purchases.

Instructions

a. Prepare the journal entries to record the above three security purchases.

b. Prepare the journal entry for the security sale on May 20.

c. Compute the unrealized gains or losses and prepare the adjusting entries for Aranda on December 31, 2025.

E16.12 (LO 2, 3) (Journal Entries for Fair Value and Equity Methods) The following are independent situations.

Situation 1: Conchita Cosmetics acquired 10% of the 200,000 shares of common stock of Martinez Fashion at a total cost of $13 per share on March 18, 2025. On June 30, Martinez declared and paid $75,000 cash dividends to all stockholders. On December 31, Martinez reported net income of $122,000 for the year. At December 31, the market price of Martinez Fashion was $15 per share.

Situation 2: Monica, Inc. obtained significant influence over Seles Corporation by buying 30% of Seles's 30,000 outstanding shares of common stock at a total cost of $9 per share on January 1, 2025. On June 15, Seles declared and paid cash dividends of $36,000 to all stockholders. On December 31, Seles reported a net income of $85,000 for the year.

Instructions

Prepare all necessary journal entries in 2025 for both situations.

E16.13 (LO 3) (Equity Method) Parent Co. invested $1,000,000 in Sub Co. for 25% of its outstanding stock. Sub Co. pays out 40% of net income in dividends each year.

Instructions

Use the information in the following T-account for the investment in Sub to answer the following questions.

Investment in Sub Co.	
1,000,000	
110,000	44,000

a. How much was Parent Co.'s share of Sub Co.'s net income for the year?

b. What was Sub Co.'s total net income for the year?

c. What was Sub Co.'s total dividends for the year?

d. How much was Parent Co.'s share of Sub Co.'s dividends for the year?

E16.14 (LO 2) (Equity Investment) Oregon Co. had purchased 200 shares of Washington Co. for $40 each this year (Oregon Co. does not have significant influence). Oregon Co. sold 100 shares of Washington Co. stock for $45 each. At year-end, the price per share of the Washington Co. stock had dropped to $35.

Instructions

Prepare the journal entries for these transactions and any year-end adjustments.

E16.15 (LO 2) (Equity Investments) Kenseth Company has the following securities in its portfolio on December 31, 2025. None of these investments are accounted for under the equity method.

Investments	Cost	Fair Value
1,500 shares of Gordon, Inc., common	$ 73,500	$ 69,000
5,000 shares of Wallace Corp., common	180,000	175,000
400 shares of Martin, Inc., preferred	60,000	61,600
	$313,500	$305,600

All of the securities were purchased in 2025.

In 2026, Kenseth completed the following securities transactions.

March 1 Sold the 1,500 shares of Gordon, Inc., common, @ $45 less fees of $1,200.

April 1 Bought 700 shares of Earnhart Corp., common, @ $75 plus fees of $1,300.

Kenseth's portfolio of equity securities appeared as follows on December 31, 2026.

Investments	Cost	Fair Value
5,000 shares of Wallace Corp., common	$180,000	$175,000
700 shares of Earnhart Corp., common	53,800	50,400
400 shares of Martin, Inc., preferred	60,000	58,000
	$293,800	$283,400

Instructions

Prepare the general journal entries for Kenseth Company for:

a. The 2025 adjusting entry.

b. The sale of the Gordon stock.

c. The purchase of the Earnhart stock.

d. The 2026 adjusting entry for the portfolio.

E16.16 (LO 2, 3) (Fair Value and Equity Method Compared) Jaycie Phelps Inc. acquired 20% of the outstanding common stock of Theresa Kulikowski Inc. on December 31, 2025. The purchase price was $1,200,000 for 50,000 shares. Kulikowski Inc. declared and paid an $0.85 per share cash dividend on June 30 and on December 31, 2026. Kulikowski reported net income of $730,000 for 2026. The fair value of Kulikowski's stock was $27 per share at December 31, 2026.

Instructions

a. Prepare the journal entries for Jaycie Phelps Inc. for 2025 and 2026, assuming that Phelps cannot exercise significant influence over Kulikowski.

b. Prepare the journal entries for Jaycie Phelps Inc. for 2025 and 2026, assuming that Phelps can exercise significant influence over Kulikowski.

c. At what amount is the investment in securities reported on the balance sheet under each of these methods at December 31, 2026? What is the total net income reported in 2026 under each of these methods?

E16.17 (LO 3) (Equity Method) On January 1, 2025, Pennington Corporation purchased 30% of the common shares of Edwards Company for $180,000. During the year, Edwards earned net income of $80,000 and paid dividends of $20,000.

Instructions

Prepare the entries for Pennington to record the purchase and any additional entries related to this investment in Edwards Company in 2025.

E16.18 (LO 4) (Impairment of Debt Securities) Hagar Corporation has municipal bonds classified as a held-to-maturity at December 31, 2025. These bonds have a par value of $800,000, an amortized cost of $800,000, and a fair value of $720,000. The company believes that impairment accounting is now appropriate for these bonds.

Instructions

a. Prepare the journal entry to recognize the impairment.

b. What is the new carrying value of the municipal bonds? Given that the maturity value of the bonds is $800,000, should Hagar Corporation amortize the difference between the carrying amount and the maturity value over the life of the bonds?

c. At December 31, 2026, the fair value of the municipal bonds is $760,000. Prepare the entry (if any) to record this information.

E16.19 (LO 2, 4) (Fair Value Measurement) Presented below is information related to the purchases of common stock by Lilly Company during 2025.

	Cost (at purchase date)	Fair Value (at December 31)
Investment in Arroyo Company stock	$100,000	$ 80,000
Investment in Lee Corporation stock	250,000	300,000
Investment in Woods Inc. stock	180,000	190,000
Total	$530,000	$570,000

Instructions

(Assume a zero balance for any Fair Value Adjustment account at the beginning of 2025.)

a. What entry would Lilly make at December 31, 2025, to record the investment in Arroyo Company stock if it chooses to report this security using the fair value option?

b. What entry (entries) would Lilly make at December 31, 2025, to record the investments in the Lee and Woods corporations, assuming that Lilly did not select the fair value option for these investments?

E16.20 (LO 2, 4) (Fair Value Measurement Issues) Assume the same information as in E16.19 for Lilly Company. In addition, assume that the investment in the Woods Inc. stock was sold during 2026 for $195,000. At December 31, 2026, the following information relates to its two remaining investments of common stock.

	Cost (at purchase date)	Fair Value (at December 31)
Investment in Arroyo Company stock	$100,000	$140,000
Investment in Lee Corporation stock	250,000	310,000
Total	$350,000	$450,000

Net income before any security gains and losses for 2026 was $905,000.

Instructions

a. Compute the amount of net income or net loss that Lilly should report for 2026, taking into consideration Lilly's security transactions for 2026.

b. Prepare the journal entry to record unrealized gain or loss related to the investment in Arroyo Company stock at December 31, 2026.

E16.21 (LO 1, 2, 4) (Fair Value Option) Presented below is selected information related to the financial instruments of Dawson Company at December 31, 2025. This is Dawson Company's first year of operations.

	Carrying Amount	Fair Value (at December 31)
Investment in debt securities (intent is to hold to maturity)	$ 40,000	$ 41,000
Investment in Chen Company stock	800,000	910,000
Bonds payable	220,000	195,000

Instructions

a. Dawson elects to use the fair value option for these investments. Assuming that Dawson's net income is $100,000 in 2025 before reporting any securities gains or losses, determine Dawson's net income for 2025. Assume that the difference between the carrying value and fair value is due to credit deterioration.

b. Record the journal entry, if any, necessary at December 31, 2025, to record the fair value option for the bonds payable.

E16.22 (LO 4) (Impairment) Elaina Company has the following investments as of December 31, 2025.

Investments in common stock of Laser Company	$1,500,000
Investment in debt securities of FourSquare Company	3,300,000

In both investments, the carrying value and the fair value of these two investments are the same at December 31, 2025. Elaina's stock investments do not result in significant influence on the operations of Laser Company. Elaina's debt investment is considered held-to-maturity. At December 31, 2026, the shares in Laser Company are valued at $1,100,000; the debt securities of FourSquare are valued at $2,500,000 and are considered impaired.

Instructions

a. Prepare the journal entry to record the impairment of the debt securities at December 31, 2026.

b. Assuming the fair value of the Laser shares is $1,400,000 and the value of its debt investment is $2,950,000, what entries, if any, should be recorded in 2027?

c. Assume that the debt investment in FourSquare Company was available-for-sale and the expected credit loss was $900,000. Prepare the journal entry to record this impairment on December 31, 2026.

E16.23 (LO 4) (Impairment) Morley Company in its first year of operations provides the following information related to one of its available-for-sale debt securities at December 31, 2025.

Amortized cost	$50,000
Fair value	40,000
Expected credit loss	12,000

Instructions

a. What is the amount of the credit loss that Morley should report on this available-for-sale security at December 31, 2025?

b. Prepare the journal entry to record the credit loss, if any (and any other adjustment needed), at December 31, 2025.

c. Assume that the fair value of the available-for-sale security is $53,000 at December 31, 2025, instead of $40,000. What is the amount of the credit loss that Morley should report at December 31, 2025?

d. Assume the same information as for part (c). Prepare the journal entry to record the credit loss, if necessary (and any other adjustment needed), at December 31, 2025.

***E16.24 (LO 5) (Derivative Transaction)** On January 2, 2025, Jones Company purchases a call option for $300 on Merchant common stock. The call option gives Jones the option to buy 1,000 shares of Merchant at a strike price of $50 per share. The market price of a Merchant share is $50 on January 2, 2025 (the intrinsic value is therefore $0). On March 31, 2025, the market price for Merchant stock is $53 per share, and the time value of the option is $200.

Instructions

a. Prepare the journal entry to record the purchase of the call option on January 2, 2025.

b. Prepare the journal entry (entries) to recognize the change in the fair value of the call option as of March 31, 2025.

c. What was the effect on net income of entering into the derivative transaction for the period January 2 to March 31, 2025?

***E16.25 (LO 6) (Fair Value Hedge)** On January 2, 2025, MacCloud Co. issued a 4-year, $100,000 note at 6% fixed interest, interest payable semiannually. MacCloud now wants to change the note to a variable-rate note.

As a result, on January 2, 2025, MacCloud Co. enters into an interest rate swap where it agrees to receive 6% fixed and pay LIBOR of 5.7% for the first 6 months on $100,000. At each 6-month period, the variable rate will be reset. The variable rate is reset to 6.7% on June 30, 2025.

Instructions

a. Compute the net interest expense to be reported for this note and related swap transaction as of June 30, 2025.

b. Compute the net interest expense to be reported for this note and related swap transaction as of December 31, 2025.

***E16.26 (LO 6) (Cash Flow Hedge)** On January 2, 2025, Parton Company issues a 5-year, $10,000,000 note at LIBOR, with interest paid annually. The variable rate is reset at the end of each year. The LIBOR rate for the first year is 5.8%.

Parton Company decides it prefers fixed-rate financing and wants to lock in a rate of 6%. As a result, Parton enters into an interest rate swap to pay 6% fixed and receive LIBOR based on $10 million. The variable rate is reset to 6.6% on January 2, 2026.

Instructions

a. Compute the net interest expense to be reported for this note and related swap transactions as of December 31, 2025.

b. Compute the net interest expense to be reported for this note and related swap transactions as of December 31, 2026.

***E16.27 (LO 6) (Fair Value Hedge)** Sarazan Company issues a 4-year, 7.5% fixed-rate interest only, nonprepayable $1,000,000 note payable on December 31, 2024. It decides to change the interest rate from a fixed rate to variable rate and enters into a swap agreement with M&S Corp. The swap agreement specifies that Sarazan will receive a fixed rate at 7.5% and pay variable with settlement dates that match the interest payments on the debt. Assume that interest rates have declined during 2025 and that Sarazan received $13,000 as an adjustment to interest expense for the settlement at December 31, 2025. The loss related to the debt (due to interest rate changes) was $48,000. The value of the swap contract increased $48,000.

Instructions

a. Prepare the journal entry to record the payment of interest expense on December 31, 2025.

b. Prepare the journal entry to record the receipt of the swap settlement on December 31, 2025.

c. Prepare the journal entry to record the change in the fair value of the swap contract on December 31, 2025.

d. Prepare the journal entry to record the change in the fair value of the debt on December 31, 2025.

***E16.28 (LO 5) (Call Option)** On August 15, 2024, Outkast Co. invested idle cash by purchasing a call option on Counting Crows Inc. common shares for $360. The notional value of the call option is 400 shares, and the option price is $40. The option expires on January 31, 2025. The following data are available with respect to the call option.

Date	Market Price of Counting Crows Shares	Time Value of Call Option
September 30, 2024	$48 per share	$180
December 31, 2024	46 per share	65
January 15, 2025	47 per share	30

Instructions

Prepare the journal entries for Outkast for the following dates.

a. Investment in call option on Counting Crows shares on August 15, 2024.

b. September 30, 2024—Outkast prepares financial statements.

c. December 31, 2024—Outkast prepares financial statements.

d. January 15, 2025—Outkast settles the call option on the Counting Crows shares.

***E16.29 (LO 6) (Cash Flow Hedge)** Hart Golf Co. uses titanium in the production of its specialty drivers. Hart anticipates that it will need to purchase 200 ounces of titanium in November 2025, for clubs that will be sold in advance of the spring and summer of 2026. However, if the price of titanium increases, this will increase the cost to produce the clubs, which will result in lower profit margins.

To hedge the risk of increased titanium prices, on May 1, 2025, Hart enters into a titanium futures contract and designates this futures contract as a cash flow hedge of the anticipated titanium purchase. The notional amount of the contract is 200 ounces, and the terms of the contract give Hart the right and obligation to purchase titanium at a price of $500 per ounce. The price will be good until the contract expires on November 30, 2025.

Assume the following data with respect to the price of the futures contract and the titanium inventory purchase.

Date	Spot Price for November Delivery
May 1, 2025	$500 per ounce
June 30, 2025	520 per ounce
September 30, 2025	525 per ounce

Instructions

Present the journal entries for the following dates/transactions.

a. May 1, 2025—Inception of futures contract, no premium paid.

b. June 30, 2025—Hart prepares financial statements.

c. September 30, 2025—Hart prepares financial statements.

d. October 5, 2025—Hart purchases 200 ounces of titanium at $525 per ounce and settles the futures contract.

e. December 15, 2025—Hart sells clubs containing titanium purchased in October 2025 for $250,000. The cost of the finished goods inventory is $140,000.

f. Indicate the amount(s) reported in the income statement related to the futures contract and the inventory transactions on December 31, 2025.

Problems

P16.1 (LO 1) (Debt Securities) Presented below is an amortization schedule related to Spangler Company's 5-year, $100,000 bond with a 7% interest rate and a 5% yield, purchased on December 31, 2023, for $108,660.

Date	Cash Received	Interest Revenue	Bond Premium Amortization	Carrying Amount of Bonds
12/31/23				$108,660
12/31/24	$7,000	$5,433	$1,567	107,093
12/31/25	7,000	5,354	1,646	105,447
12/31/26	7,000	5,272	1,728	103,719
12/31/27	7,000	5,186	1,814	101,905
12/31/28	7,000	5,095	1,905	100,000

The following schedule presents a comparison of the amortized cost and fair value of the bonds at year-end.

	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Amortized cost	$107,093	$105,447	$103,719	$101,905	$100,000
Fair value	106,500	107,500	105,650	103,000	100,000

Instructions

a. Prepare the journal entry to record the purchase of these bonds on December 31, 2023, assuming the bonds are classified as held-to-maturity securities.

b. Prepare the journal entry (entries) related to the held-to-maturity bonds for 2024.

c. Prepare the journal entry (entries) related to the held-to-maturity bonds for 2026.

d. Prepare the journal entry (entries) to record the purchase of these bonds, assuming they are classified as available-for-sale.

e. Prepare the journal entry (entries) related to the available-for-sale bonds for 2024.

f. Prepare the journal entry (entries) related to the available-for-sale bonds for 2026.

P16.2 (LO 1) (Available-for-Sale Debt Securities) On January 1, 2025, Novotna Company purchased $400,000, 8% bonds of Aguirre Co. for $369,114. The bonds were purchased to yield 10% interest. Interest is payable semiannually on July 1 and January 1. The bonds mature on January 1, 2030. Novotna Company uses the effective-interest method to amortize discount or premium. On January 1, 2027, Novotna Company sold the bonds for $370,726 after receiving interest to meet its liquidity needs.

Instructions

a. Prepare the journal entry to record the purchase of bonds on January 1. Assume that the bonds are classified as available-for-sale.

b. Prepare the amortization schedule for the bonds.

c. Prepare the journal entries to record the semiannual interest on July 1, 2025, and December 31, 2025.

d. If the fair value of Aguirre bonds is $372,726 on December 31, 2026, prepare the necessary adjusting entry. (Assume the fair value adjustment balance on December 31, 2025, is a debit of $3,375.)

e. Prepare the journal entry to record the sale of the bonds on January 1, 2027.

P16.3 (LO 1, 2) (Debt and Equity Investments) Cardinal Paz Corp. carries an account in its general ledger called Investments, which contained debits for investment purchases, and no credits, with the following descriptions.

Feb. 1, 2025	Sharapova Company common stock, $100 par, 200 shares	$ 37,400
April 1	U.S. government bonds, 11%, due April 1, 2035, interest payable April 1 and October 1, 110 bonds of $1,000 par each	110,000
July 1	McGrath Company 12% bonds, par $50,000, dated March 1, 2025, purchased at 104 plus accrued interest, interest payable annually on March 1, due March 1, 2045	54,000

Instructions

(Round all computations to the nearest dollar.)

a. Prepare entries necessary to classify the amounts into proper accounts, assuming that the debt securities are classified as available-for-sale. Sharapova has 200,000 shares outstanding.

b. Prepare the entry to record the accrued interest and the amortization of premium on December 31, 2025, using the straight-line method.

c. The fair values of the investments on December 31, 2025, were:

Sharapova Company common stock	$ 31,800
U.S. government bonds	124,700
McGrath Company bonds	58,600

What entry or entries, if any, would you recommend be made?

d. The U.S. government bonds were sold on July 1, 2026, for $119,200 plus accrued interest. Give the proper entry.

P16.4 (LO 1) (Debt Investments) Presented below is information taken from a bond investment amortization schedule with related fair values provided. These bonds are classified as available-for-sale.

	12/31/25	12/31/26	12/31/27
Amortized cost	$491,150	$519,442	$550,000
Fair value	497,000	509,000	550,000

Instructions

a. Indicate whether the bonds were purchased at a discount or at a premium.

b. Prepare the adjusting entry to record the bonds at fair value at December 31, 2025. The Fair Value Adjustment account has a debit balance of $1,000 prior to adjustment.

c. Prepare the adjusting entry to record the bonds at fair value at December 31, 2026.

P16.5 (LO 2) Excel (Equity Securities Entries and Disclosures) Parnevik Company has the following securities in its investment portfolio on December 31, 2025 (all securities were purchased in 2025): (1) 3,000 shares of Anderson Co. common stock which cost $58,500, (2) 10,000 shares of Munter Ltd. common stock which cost $580,000, and (3) 6,000 shares of King Company preferred stock which cost $255,000. The Fair Value Adjustment account shows a credit of $10,100 at the end of 2025.

In 2026, Parnevik completed the following securities transactions.

1. On January 15, sold 3,000 shares of Anderson's common stock at $22 per share less fees of $2,150.
2. On April 17, purchased 1,000 shares of Castle's common stock at $33.50 per share plus fees of $1,980.

On December 31, 2026, the market prices per share of these securities were Munter $61, King $40, and Castle $29. In addition, the accounting supervisor of Parnevik told you that, even though all these securities have readily determinable fair values, Parnevik will not actively trade these securities because the top management intends to hold them for more than one year.

Instructions

a. Prepare the entry for the security sale on January 15, 2026.

b. Prepare the journal entry to record the security purchase on April 17, 2026.

c. Compute the unrealized gains or losses and prepare the adjusting entry for Parnevik on December 31, 2026.

d. How should the unrealized gains or losses be reported on Parnevik's income statement and balance sheet?

P16.6 (LO 2) (Equity Securities Entries) McElroy Company has the following portfolio of investment securities at September 30, 2025, its most recent reporting date.

Investment Securities	Cost	Fair Value
Horton, Inc. common (5,000 shares)	$215,000	$200,000
Monty, Inc. preferred (3,500 shares)	133,000	140,000
Oakwood Corp. common (1,000 shares)	180,000	179,000

On October 10, 2025, the Horton shares were sold at a price of $54 per share. In addition, 3,000 shares of Patriot common stock were acquired at $54.50 per share on November 2, 2025. The December 31, 2025, fair values were Monty $106,000, Patriot $132,000, and Oakwood $193,000.

Instructions

Prepare the journal entries to record the sale, purchase, and adjusting entries related to the equity securities in the last quarter of 2025. None of these investments represents significant influence. The Fair Value Adjustment account has a zero balance prior to September 30, 2025.

P16.7 (LO 1) (Available-for-Sale and Held-to-Maturity Debt Securities Entries) The following information relates to the debt securities investments of Wildcat Company.

1. On February 1, the company purchased 10% bonds of Gibbons Co. having a par value of $300,000 at 100 plus accrued interest. Interest is payable April 1 and October 1.
2. On April 1, semiannual interest is received.
3. On July 1, 9% bonds of Sampson, Inc. were purchased. These bonds with a par value of $200,000 were purchased at 100 plus accrued interest. Interest dates are June 1 and December 1.
4. On September 1, bonds with a par value of $60,000, purchased on February 1, are sold at 99 plus accrued interest.
5. On October 1, semiannual interest is received.
6. On December 1, semiannual interest is received.
7. On December 31, the fair value of the bonds purchased February 1 and July 1 are 95 and 93, respectively.

Instructions

a. Prepare any journal entries you consider necessary, including year-end entries (December 31), assuming these are available-for-sale securities.

b. If Wildcat classified these as held-to-maturity investments, explain how the journal entries would differ from those in part (a).

P16.8 (LO 2, 3) (Fair Value and Equity Methods) Brooks Corp. is a medium-sized corporation specializing in quarrying stone for building construction. The company has long dominated the market, at one time achieving a 70% market penetration. During prosperous years, the company's profits, coupled with a conservative dividend policy, resulted in funds available for outside investment. Over the years, Brooks has had a policy of investing idle cash in equity securities. In particular, Brooks has made periodic investments in the company's principal vendor of mining equipment, Norton Industries. Although the firm currently owns 12% of the outstanding common stock of Norton Industries, Brooks does not have significant influence over the operations of Norton Industries.

Cheryl Thomas has recently joined Brooks as assistant controller, and her first assignment is to prepare the 2025 year-end adjusting entries for the accounts that are valued by the "fair value" rule for financial reporting purposes. Thomas has gathered the following information about Brooks' pertinent accounts.

1. Brooks has equity securities related to Delaney Motors and Patrick Electric. During 2025, Brooks purchased 100,000 shares of Delaney Motors for $1,400,000; these shares currently have a fair value of $1,600,000. Brooks' investment in Patrick Electric has not been profitable; the company acquired 50,000 shares of Patrick in April 2025 at $20 per share, a purchase that currently has a value of $720,000.
2. Prior to 2025, Brooks invested $22,500,000 in Norton Industries and has not changed its holdings this year. This investment in Norton Industries was valued at $21,500,000 on December 31, 2024. Brooks' 12% ownership of Norton Industries has a current fair value of $22,225,000 on December 2025.

Instructions

a. Prepare the appropriate adjusting entries for Brooks as of December 31, 2025, to reflect the application of the "fair value" rule for the securities described above.

b. For the securities presented above, describe how the results of the valuation adjustments made in (a) would be reflected in the body of Brooks' 2025 financial statements.

c. Prepare the entries for the Norton investment, assuming that Brooks owns 25% of Norton's shares. Norton reported income of $500,000 in 2025 and paid cash dividends of $100,000.

P16.9 (LO 2, 4) (Gain on Sale of Investments and Comprehensive Income) On January 1, 2025, Acker Inc. had the following balance sheet.

Acker Inc.
Balance Sheet
As of January 1, 2025

Assets		Equity	
Cash	$ 50,000	Common stock	$260,000
Debt investments (available-for-sale)	240,000	Accumulated other comprehensive income	30,000
Total	$290,000	Total	$290,000

The accumulated other comprehensive income related to unrealized holding gains on available-for-sale debt securities. The fair value of Acker Inc.'s available-for-sale debt securities at December 31, 2025, was $190,000; its cost was $140,000. No securities were purchased during the year. Acker Inc.'s income statement for 2025 was as follows. (Ignore income taxes.)

Acker Inc.
Income Statement
For the Year Ended December 31, 2025

Dividend revenue	$ 5,000
Gain on sale of investments	30,000
Net income	$35,000

Instructions

(Assume all transactions during the year were for cash.)

a. Prepare the journal entry to record the sale of the available-for-sale debt securities in 2025.

b. Prepare the journal entry to record the Unrealized Holding Gain or Loss for 2025.

c. Prepare a statement of comprehensive income for 2025.

d. Prepare a balance sheet as of December 31, 2025.

P16.10 (LO 2) Excel (Equity Investments) Castleman Holdings, Inc. had the following equity investment portfolio at January 1, 2025.

Evers Company	1,000 shares @ $15 each	$15,000
Rogers Company	900 shares @ $20 each	18,000
Chance Company	500 shares @ $9 each	4,500
Equity investments @ cost		37,500
Fair value adjustment		(7,500)
Equity investments @ fair value		$30,000

During 2025, the following transactions took place.

1. On March 1, Rogers Company paid a $2 per share dividend.
2. On April 30, Castleman Holdings, Inc. sold 300 shares of Chance Company for $11 per share.
3. On May 15, Castleman Holdings, Inc. purchased 100 more shares of Evers Company stock at $16 per share.
4. At December 31, 2025, the stocks had the following price per share values: Evers $17, Rogers $19, and Chance $8.

During 2026, the following transactions took place.

5. On February 1, Castleman Holdings, Inc. sold the remaining Chance shares for $8 per share.
6. On March 1, Rogers Company paid a $2 per share dividend.
7. On December 21, Evers Company declared a cash dividend of $3 per share to be paid in the next month.
8. At December 31, 2026, the stocks had the following price per share values: Evers $19 and Rogers $21.

Instructions

a. Prepare journal entries for each of the above transactions.

b. Prepare a partial balance sheet showing the investment-related amounts to be reported at December 31, 2025 and 2026.

P16.11 (LO 2, 4) (Equity Securities—Statement Presentation) Fernandez Corp. invested its excess cash in securities during 2025. As of December 31, 2025, the securities portfolio consisted of the following common stocks. Fernandez does not have significant influence in any of these companies.

Security	Quantity		Cost	Fair Value
Lindsay Jones, Inc.	1,000 shares		$ 15,000	$ 21,000
Poley Corp.	2,000 shares		40,000	42,000
Arnold Aircraft	2,000 shares		72,000	60,000
		Totals	$127,000	$123,000

Instructions

a. What should be reported on Fernandez's December 31, 2025, balance sheet relative to these securities? What should be reported on Fernandez's 2025 income statement?

On December 31, 2026, Fernandez's securities portfolio consisted of the following common stocks.

Security	Quantity		Cost	Fair Value
Lindsay Jones, Inc.	1,000 shares		$ 15,000	$20,000
Lindsay Jones, Inc.	2,000 shares		33,000	40,000
Duff Company	1,000 shares		16,000	12,000
Arnold Aircraft	2,000 shares		72,000	22,000
		Totals	$136,000	$94,000

During the year 2026, Fernandez Corp. sold 2,000 shares of Poley Corp. for $38,200 and purchased 2,000 more shares of Lindsay Jones, Inc. and 1,000 shares of Duff Company.

b. What should be reported on Fernandez's December 31, 2026, balance sheet? What should be reported on Fernandez's 2026 income statement?

On December 31, 2027, Fernandez's securities portfolio consisted of the following common stocks.

Security	Quantity		Cost	Fair Value
Arnold Aircraft	2,000 shares		$72,000	$82,000
Duff Company	500 shares		8,000	6,000
		Totals	$80,000	$88,000

During the year 2027, Fernandez Corp. sold 3,000 shares of Lindsay Jones, Inc. for $39,900 and 500 shares of Duff Company at a loss of $2,700.

c. What should be reported on the face of Fernandez's December 31, 2027, balance sheet? What should be reported on Fernandez's 2027 income statement?

***P16.12 (LO 5)** Excel **(Derivative Financial Instrument)** The treasurer of Miller Co. has read on the Internet that the stock price of Wade Inc. is about to take off. In order to profit from this potential development, Miller Co. purchased a call option on Wade common shares on July 7, 2025, for $240. The call option is for 200 shares (notional value), and the strike price is $70. (The market price of a share of Wade stock on that date is $70.) The option expires on January 31, 2026. The following data are available with respect to the call option.

Date	Market Price of Wade Shares	Time Value of Call Option
September 30, 2025	$77 per share	$180
December 31, 2025	75 per share	65
January 4, 2026	76 per share	30

Instructions

Prepare the journal entries for Miller Co. for the following dates.

a. July 7, 2025—Investment in call option on Wade shares.

b. September 30, 2025—Miller prepares financial statements.

c. December 31, 2025—Miller prepares financial statements.

d. January 4, 2026—Miller settles the call option on the Wade shares.

***P16.13 (LO 5) (Derivative Financial Instrument)** Johnstone Co. purchased a put option on Ewing common shares on July 7, 2025, for $240. The put option is for 200 shares, and the strike price is $70. (The market price of a share of Ewing stock on that date is $70.) The option expires on January 31, 2026. The following data are available with respect to the put option.

Date	Market Price of Ewing Shares	Time Value of Put Option
September 30, 2025	$77 per share	$125
December 31, 2025	75 per share	50
January 31, 2026	78 per share	0

Instructions

Prepare the journal entries for Johnstone Co. for the following dates.

a. July 7, 2025—Investment in put option on Ewing shares.

b. September 30, 2025—Johnstone prepares financial statements.

c. December 31, 2025—Johnstone prepares financial statements.

d. January 31, 2026—Put option expires.

***P16.14 (LO 5) (Free-Standing Derivative)** Warren Co. purchased a put option on Echo common shares on January 7, 2025, for $360. The put option is for 400 shares, and the strike price is $85 (which equals the price of an Echo share on the purchase date). The option expires on July 31, 2025. The following data are available with respect to the put option.

Date	Market Price of Echo Shares	Time Value of Put Option
March 31, 2025	$80 per share	$200
June 30, 2025	82 per share	90
July 6, 2025	77 per share	25

Instructions

Prepare the journal entries for Warren Co. for the following dates.

a. January 7, 2025—Investment in put option on Echo shares.

b. March 31, 2025—Warren prepares financial statements.

c. June 30, 2025—Warren prepares financial statements.

d. July 6, 2025—Warren settles the put option on the Echo shares.

***P16.15 (LO 6) Excel (Fair Value Hedge Interest Rate Swap)** On December 31, 2025, Mercantile Corp. had a $10,000,000, 8% fixed-rate note outstanding, payable in 2 years. It decides to enter into a 2-year swap with Chicago First Bank to convert the fixed-rate debt to variable-rate debt. The terms of the swap indicate that Mercantile will receive interest at a fixed rate of 8% and will pay a variable rate equal to the 6-month LIBOR rate, based on the $10,000,000 amount. The LIBOR rate on December 31, 2025, is 7%. The LIBOR rate will be reset every 6 months and will be used to determine the variable rate to be paid for the following 6-month period.

Mercantile Corp. designates the swap as a fair value hedge. Assume that the hedging relationship meets all the conditions necessary for hedge accounting. The 6-month LIBOR rate and the swap and debt fair values are as follows.

Date	6-Month LIBOR Rate	Swap Fair Value	Debt Fair Value
December 31, 2025	7.0%	—	$10,000,000
June 30, 2026	7.5%	(200,000)	9,800,000
December 31, 2026	6.0%	60,000	10,060,000

Instructions

a. Present the journal entries to record the following transactions.

1. The entry, if any, to record the swap on December 31, 2025.

2. The entry to record the semiannual debt interest payment on June 30, 2026.

3. The entry to record the settlement of the semiannual swap amount receivables at 8%, less amount payable at LIBOR, 7%.

4. The entry to record the change in the fair value of the debt on June 30, 2026.

5. The entry to record the change in the fair value of the swap at June 30, 2026.

b. Indicate the amount(s) reported on the balance sheet and income statement related to the debt and swap on December 31, 2025.

c. Indicate the amount(s) reported on the balance sheet and income statement related to the debt and swap on June 30, 2026.

d. Indicate the amount(s) reported on the balance sheet and income statement related to the debt and swap on December 31, 2026.

***P16.16 (LO 6) (Cash Flow Hedge)** LEW Jewelry Co. uses gold in the manufacture of its products. LEW anticipates that it will need to purchase 500 ounces of gold in October 2025, for jewelry that will be

shipped for the holiday shopping season. However, if the price of gold increases, LEW's cost to produce its jewelry will increase, which would reduce its profit margins.

To hedge the risk of increased gold prices, on April 1, 2025, LEW enters into a gold futures contract and designates this futures contract as a cash flow hedge of the anticipated gold purchase. The notional amount of the contract is 500 ounces, and the terms of the contract give LEW the right and the obligation to purchase gold at a price of $300 per ounce. The price will be good until the contract expires on October 31, 2025.

Assume the following data with respect to the price of the futures contract and the gold inventory purchase:

Date	Spot Price for October Delivery
April 1, 2025	$300 per ounce
June 30, 2025	310 per ounce
September 30, 2025	315 per ounce

Instructions

Prepare the journal entries for the following transactions.

a. April 1, 2025—Inception of the futures contract, no premium paid.

b. June 30, 2025—LEW Co. prepares financial statements.

c. September 30, 2025—LEW Co. prepares financial statements.

d. October 10, 2025—LEW Co. purchases 500 ounces of gold at $315 per ounce and settles the futures contract.

e. December 20, 2025—LEW sells jewelry containing gold purchased in October 2025 for $350,000. The cost of the finished goods inventory is $200,000.

f. Indicate the amount(s) reported on the balance sheet and income statement related to the futures contract on June 30, 2025.

g. Indicate the amount(s) reported in the income statement related to the futures contract and the inventory transactions on December 31, 2025.

***P16.17 (LO 6) (Fair Value Hedge)** On October 15, 2025, Oil Products Co. purchased 4,000 barrels of fuel oil with a cost of $240,000 ($60 per barrel). Oil Products is holding this inventory in anticipation of the winter 2026 heating season. Oil Products accounts for its inventory at the lower-of-FIFO-cost-or-net realizable value. To hedge against potential declines in the value of the inventory, Oil Products also purchased a put option on the fuel oil. Oil Products paid an option premium of $300 for the put option, which gives Oil Products the option to sell 4,000 barrels of fuel oil at a strike price of $60 per gallon. The option expires on March 1, 2026. The following data are available with respect to the values of the fuel of inventory and the put option.

Date	Market Price of Fuel Oil	Time Value of Put Option
October 31, 2025	$58 per gallon	$175
November 30, 2025	57 per gallon	105
December 31, 2025	54 per gallon	40

Instructions

a. Prepare the journal entries of Oil Products for the following dates.

1. October 15, 2025—Oil Products purchases fuel oil and the put option on fuel oil.

2. October 31, 2025—Oil Products prepares financial statements.

3. November 30, 2025—Oil Products prepares financial statements.

4. December 31, 2025—Oil Products prepares financial statements.

b. Indicate the amount(s) reported on the balance sheet and income statement related to the fuel oil inventory and the put option on November 30, 2025.

c. Indicate the amount(s) reported on the balance sheet and income statement related to the fuel oil and the put option on December 31, 2025.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ16.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What investments does P&G report in 2020, and how are these investments accounted for in its financial statements?

b. How are P&G's investments valued? How does P&G determine fair value?

c. How does P&G use derivative financial instruments?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ16.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. Based on the information contained in these financial statements, determine each of the following for each company.

1. Cash used in (for) investing activities during 2020 (from the statement of cash flows).

2. What was the total other comprehensive income for the year 2020?

3. What was the unrealized gains or losses reported as part of other comprehensive income?

b. Identify from Coca-Cola's December 31, 2020, balance sheet the investments it reported as being accounted for under the equity method.

c. In Note 4, what is Coca-Cola's policy regarding its cost method investments?

Financial Statement Analysis Case: Union Planters

UYJ16.3 **Union Planters** is a Tennessee bank holding company (that is, a corporation that owns banks). (Union Planters is now part of **Regions Bank**.) Union Planters manages $32 billion in assets, the largest of which is its loan portfolio of $19 billion. In addition to its loan portfolio, however, like other banks it has significant debt investments. The nature of these investments varies from short-term to long-term. As a consequence, consistent with the requirements of accounting rules, Union Planters reports its investments in two different categories—trading and available-for-sale. The following facts were found in a recent Union Planters' annual report.

(all dollars in millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Trading account assets	$ 275	—	—	$ 275
Securities available-for-sale	8,209	$108	$15	8,302
Net income				224
Net securities gains (losses)				(9)

Instructions

a. Why do you suppose Union Planters purchases investments, rather than simply making loans? Why does it purchase investments that vary in nature both in terms of their maturities and in type (debt versus stock)?

b. How must Union Planters account for its investments in each of the two categories?

c. In what ways does classifying investments into two different categories assist investors in evaluating the profitability of a company like Union Planters?

d. Suppose that the management of Union Planters was not happy with its net income for the year. What step could it have taken with its investment portfolio that would have definitely increased reported profit? How much could it have increased reported profit? Why do you suppose it chose not to do this?

Accounting, Analysis, and Principles

UYJ16.4 Instar Company has several investments in the securities of other companies. The following information regarding these investments is available at December 31, 2025.

1. Instar holds bonds issued by Dorsel Corp. The bonds have an amortized cost of $320,000 and their fair value at December 31, 2025, is $400,000. Instar intends to hold the bonds until they mature on December 31, 2033.

2. Instar has invested idle cash in the equity securities of several publicly traded companies. Instar intends to sell these securities during the first quarter of 2026, when it will need the cash to acquire seasonal inventory. These equity securities have a cost basis of $800,000 and a fair value of $920,000 at December 31, 2025.
3. Instar has an ownership stake in one of the companies that supplies Instar with various components Instar uses in its products. Instar owns 6% of the common stock of the supplier, does not have any representation on the supplier's board of directors, does not exchange any personnel with the supplier, and does not consult with the supplier on any of the supplier's operating, financial, or strategic decisions. The cost basis of the investment in the supplier is $1,200,000 and the fair value of the investment at December 31, 2025, is $1,550,000. Instar does not intend to sell the investment in the foreseeable future. The supplier reported net income of $80,000 for 2025 and paid no dividends.
4. Instar purchased 25% of the stock of Slobbaer Co. for $900,000. Instar has significant influence over the operating activities of Slobbaer Co. During 2025, Slobbaer Co. reported net income of $300,000 and paid a dividend of $100,000.

Accounting

a. Determine how each of the investments described above should be classified and accounted for.

b. Prepare any December 31, 2025, journal entries needed for Instar relating to Instar's various investments in other companies. Assume 2025 is Instar's first year of operations.

Analysis

What is the effect on Instar's 2025 net income (as reported on Instar's income statement) of Instar's investments in other companies?

Principles

Briefly explain the different rationales for the different accounting and reporting rules for different types of investments in the securities of other companies.

Developing Your Professional Skills

Critical-Thinking Cases

CT16.1 (LO 1) (Issues Raised About Investment Securities) You have just started work for Warren Co. as part of the controller's group involved in current financial reporting problems. Jane Henshaw, controller for Warren, is interested in your accounting background because the company has experienced a series of financial reporting surprises over the last few years. Recently, the controller has learned from the company's auditors that there is authoritative literature that may apply to its investment in securities. She assumes that you are familiar with this pronouncement and asks how the following situations should be reported in the financial statements.

Situation 1: Trading debt securities in the current assets section have a fair value that is $4,200 lower than cost.

Situation 2: A trading debt security whose fair value is currently less than cost is transferred to the available-for-sale category.

Situation 3: An available-for-sale debt security whose fair value is currently less than cost is classified as noncurrent but is to be reclassified as current.

Situation 4: The company's portfolio of held-to-maturity debt securities consists of the bonds of one company. At the end of the prior year, the fair value of the security was 50% of original cost, and this reduction in fair value was reported as an impairment. However, at the end of the current year, the fair value of the security had appreciated to twice the original cost.

Situation 5: The company has purchased some equity securities that it plans to hold for less than a year. The fair value of the securities is $7,700 below its cost.

Instructions

What is the effect upon carrying value and earnings for each of the situations above? Assume that these situations are unrelated.

CT16.2 (LO 2) (Equity Securities) Lexington Co. has the following securities outstanding on December 31, 2025 (its first year of operations).

	Cost	Fair Value
Greenspan Corp. stock	$20,000	$19,000
Summerset Company stock	9,500	8,800
Tinkers Company stock	20,000	20,600
	$49,500	$48,400

During 2026, Summerset Company stock was sold for $9,200, the difference between the $9,200 and the "fair value" of $8,800 being recorded as a "Gain on Sale of Investments." The market price of the stock on December 31, 2026, was Greenspan Corp. stock $19,900; Tinkers Company stock $20,500.

Instructions

a. What justification is there for valuing equity securities at fair value and reporting the unrealized gain or loss as part of net income?

b. How should Lexington Co. report this information in its financial statements at December 31, 2025? Explain.

c. Did Lexington Co. properly account for the sale of the Summerset Company stock? Explain.

d. Are there any additional entries necessary for Lexington Co. at December 31, 2026, to reflect the facts on the financial statements in accordance with generally accepted accounting principles? Explain.

(AICPA adapted)

CT16.3 (LO 1) (Financial Statement Effect of Securities) Presented below are three unrelated situations involving equity securities.

Situation 1: A debt security, whose fair value is currently less than cost, is classified as available-for-sale but is to be reclassified as trading.

Situation 2: A noncurrent held-to-maturity portfolio with an aggregate fair value in excess of cost includes one particular debt security whose fair value has declined to less than one-half of the original cost. The decline in value is considered to be permanent.

Situation 3: The portfolio of trading debt securities has a cost in excess of fair value of $13,500. The available-for-sale debt portfolio has a fair value in excess of cost of $28,600.

Instructions

What is the effect upon carrying value and earnings for each of the situations above?

CT16.4 (LO 3) (Investment Accounted for Under the Equity Method) On July 1, 2026, Fontaine Company purchased for cash 40% of the outstanding common stock of Knoblett Company. Both Fontaine Company and Knoblett Company have a December 31 year-end. Knoblett Company, whose common stock is actively traded in the over-the-counter market, reported its total net income for the year to Fontaine Company and also paid cash dividends on November 15, 2026, to Fontaine Company and its other stockholders.

Instructions

How should Fontaine Company report the above facts in its December 31, 2026, balance sheet and its income statement for the year then ended? Discuss the rationale for your answer.

(AICPA adapted)

CT16.5 (LO 3) Writing (Equity Investment) On July 1, 2025, Selig Company purchased for cash 30% of the outstanding common stock of Spoor Corporation. Both Selig and Spoor have a December 31 year-end. Spoor Corporation, whose common stock is actively traded on the NASDAQ exchange, paid a cash dividend on November 15, 2025, to Selig Company and its other stockholders. It also reported its total net income for the year of $920,000 to Selig Company.

Instructions

Prepare a one-page memorandum of instructions on how Selig Company should report the above facts in its December 31, 2025, balance sheet and its 2025 income statement. In your memo, identify and describe the method of valuation you recommend. Provide rationale where you can. Address your memo to the chief accountant at Selig Company.

CT16.6 (LO 4) Ethics (Fair Value) Addison Manufacturing holds a large portfolio of debt securities as an investment. The fair value of the portfolio is greater than its original cost, even though some debt securities have decreased in value. Sam Beresford, the financial vice president, and Angie Nielson, the controller, are near year-end in the process of classifying for the first time this securities portfolio in

accordance with GAAP. Beresford wants to classify those securities that have increased in value during the period as trading securities in order to increase net income this year. He wants to classify all the securities that have decreased in value as held-to-maturity.

Nielson disagrees. She wants to classify those debt securities that have decreased in value as trading securities and those that have increased in value as held-to-maturity. She contends that the company is having a good earnings year and that recognizing the losses will help to smooth the income this year. As a result, the company will have built-in gains for future periods when the company may not be as profitable.

Instructions

Answer the following questions.

a. Will classifying the portfolio as each proposes actually have the effect on earnings that each says it will?

b. Is there anything unethical in what each of them proposes? Who are the stakeholders affected by their proposals?

c. Assume that Beresford and Nielson properly classify the entire portfolio into trading, available-for-sale, and held-to-maturity categories. But then each proposes to sell just before year-end the securities with gains or with losses, as the case may be, to accomplish their effect on earnings. Is this unethical?

FASB Codification References

[1] FASB ASC Glossary. [Predecessor literature: "Accounting for Certain Investments in Debt and Equity Securities," *Statement of Financial Accounting Standards No. 115* (Norwalk, Conn.: FASB, 1993), par. 137.]

[2] FASB ASC 820-10-20. [Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006).]

[3] FASB ASC 220. [Predecessor literature: "Reporting Comprehensive Income," *Statement of Financial Accounting Standards No. 130* (Norwalk, Conn.: FASB, 1997).]

[4] FASB ASC 323-10-15. [Predecessor literature: "The Equity Method of Accounting for Investments in Common Stock," *Opinions of the Accounting Principles Board No. 18* (New York: AICPA, 1971), par. 17.]

[5] FASB ASC 323-10-15-10. [Predecessor literature: "Criteria for Applying the Equity Method of Accounting for Investments in Common Stock," *Interpretations of the Financial Accounting Standards Board No. 35* (Stamford, Conn.: FASB, 1981).]

[6] FASB ASC 323-10-35. [Predecessor literature: "The Equity Method of Accounting for Investments in Common Stock," *Opinions of the Accounting Principles Board No. 18* (New York: AICPA, 1971), par. 19(i).]

[7] FASB ASC 815-10-05. [Predecessor literature: "Accounting for Derivative Instruments and Hedging Activities," *Statement of Financial Accounting Standards No. 133* (Stamford, Conn.: FASB, 1998).]

[8] FASB ASC 820-10. [Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006).]

[9] FASB ASC 815-10-05-4. [Predecessor literature: "Accounting for Derivative Instruments and Hedging Activities," *Statement of Financial Accounting Standards No. 133* (Stamford, Conn.: FASB, 1998), par. 249.]

[10] FASB ASC 815-10-05-4. [Predecessor literature: "Accounting for Derivative Instruments and Hedging Activities," *Statement of Financial Accounting Standards No. 133* (Stamford, Conn.: FASB, 1998).]

[11] FASB ASC 825-10-25-1. [Predecessor literature: "The FairValue Option for Financial Assets and Liabilities, Including an Amendment of FASB Statement No. 115," *Statement of Financial Accounting Standards No. 159* (Norwalk, Conn.: FASB, February 2007).]

[12] FASB ASC 820-10. [Predecessor literature: "Fair Value Measurement," *Statement of Financial Accounting Standards No. 157* (Norwalk, Conn.: FASB, September 2006).]

[13] FASB ASC 825-10-25-1. [Predecessor literature: "The Fair Value Option for Financial Assets and Liabilities, Including an Amendment of FASB Statement No. 115," *Statement of Financial Accounting Standards No. 159* (Norwalk, Conn.: FASB, February 2007).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE16.1 Access the glossary ("Master Glossary") to answer the following.

a. What are trading securities?

b. What is the definition of "holding gain or loss"?

c. What is a cash flow hedge?

d. What is a fair value hedge?

CE16.2 What guidance does the SEC give for disclosures regarding accounting policies used for derivatives?

CE16.3 When would an investor discontinue applying the equity method in an investment? Are there any exceptions to this rule?

CE16.4 For balance sheet purposes, can the fair value of a derivative in a loss position be netted against the fair value of a derivative in a gain position?

Codification Research Case

Your client, Cascade Company, is planning to invest some of its excess cash in 5-year revenue bonds issued by the county and in the stock of one of its suppliers, Teton Co. Teton's shares trade on the over-the-counter market. The company would like you to conduct some research on the accounting for these investments.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Since the Teton shares do not trade on one of the large stock markets, Cascade argues that the fair value of this investment is not readily available. According to the authoritative literature, when is the fair value of a security "readily determinable"?

b. To avoid volatility in their financial statements due to fair value adjustments, Cascade debated whether the bond investment could be classified as held-to-maturity; Cascade is pretty sure it will hold the bonds for 5 years. How close to maturity could Cascade sell an investment and still classify it as held-to-maturity?

c. What disclosures must be made for any sale or transfer from securities classified as held-to-maturity?

Additional Professional Resources

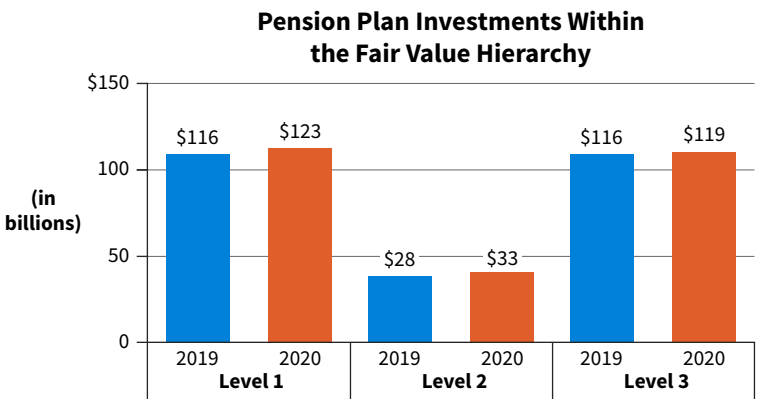
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Analyze Investments

DA16.1 You just started an internship as a data analyst with the administrator of a very large pension fund. You know that the balance sheet of a pension fund is primarily made up of investments, but beyond that, you have a lot to learn. Perhaps using some data visualizations will help you hit the ground running on your internship!

Using visualizations like the following chart can provide some quick, yet relevant, information about a company's investment balance. Understanding the distribution of investment values across the three levels of the fair value hierarchy can provide good insights into the different types of investments held by a pension plan.



Required

Using different visualizations of assets held by a pension fund, you will answer a series of multiple-choice questions about the make-up of the investment category itself and the relationship of investments to total assets on the pension fund's balance sheet.

Go to Wiley Course Resources for complete details and instructions.

DA16.2 Data visualizations can be a powerful tool for a data analyst, but the data is just one piece. We must apply our knowledge about fair value measurement to understand the story that the data is telling us.

Required

Using the same visualizations from DA16.1, you will explain why a company must classify assets measured at fair value using the fair value hierarchy. You should consider why this classification is relevant for financial statement users.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Gain Insights on Investment Holdings

DA16.3 The data visualizations from DA16.1 give you a baseline understanding of the types of assets and investments held by the pension fund you are working for. Now, you are ready to move into some advanced analysis using raw data about the individual investment holdings.

Required

You are provided raw data on the pension fund's total assets, the cost versus fair value of investments, and fair value of investments by level in the fair value hierarchy. Using Excel pivot tables and pivot charts, you will analyze the raw data and document your insights on the investments held by the pension fund, including looking for potential impairments.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 9

Compare the accounting for investments under GAAP and IFRS.

The accounting for investments is discussed in *IAS 27* ("Consolidated and Separate Financial Statements"), *IAS 28* ("Accounting for Investments in Associates"), *IAS 39* ("Financial Instruments: Recognition and Measurement"), and *IFRS 9* ("Financial Instruments"). Until recently, when the IASB issued *IFRS 9*, the accounting and reporting for investments under IFRS and GAAP were for the most part very similar. However, *IFRS 9* introduces new investment classifications and increases the situations when investments are accounted for at fair value, with gains and losses recorded in income. Following are the key similarities and differences between GAAP and IFRS related to investments.

Similarities

- GAAP and IFRS use similar classifications for financial assets: cash, loans and receivables, investments, and derivatives.
- Both IFRS and GAAP require that financial assets be sorted into specific categories for measurement and classification purposes.
- Held-to-maturity (GAAP) and held-for-collection (IFRS) investments are accounted for at amortized cost. Gains and losses on some investments are reported in other comprehensive income.

- Amortized cost or fair value is used depending upon the classification of the financial instrument.
- The definitions of amortized cost and fair value are the same.
- Both GAAP and IFRS use the same test to determine whether the equity method of accounting should be used, that is, significant influence with a general guideline of over 20% ownership.
- GAAP and IFRS are similar in the accounting for the fair value option. That is, the option to use the fair value method must be made at initial recognition, the selection is irrevocable, and gains and losses are reported as part of income.

Differences

- While GAAP classifies debt investments as trading, available-for-sale, and held-to-maturity, IFRS classifies debt investments as held-for-collection (debt investments) and trading.
- GAAP requires that all changes in fair value for **all equity securities** be reported as part of income. IFRS requires that changes in fair value for **non-trading equity securities** be reported as part of other comprehensive income.
- While the measurement of impairments is similar under GAAP and IFRS, GAAP does not permit the reversal of an impairment charge related to held-to-maturity debt investments and equity investments. IFRS allows reversals of impairments of held-for-collection investments.
- While GAAP and IFRS are similar in the accounting for the fair value option, one difference is that GAAP permits the fair value option for equity method investments; IFRS does not.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 17

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Revenue Recognition

WHAT guidelines has the FASB issued for the accounting and reporting related to revenue recognition?

The FASB uses a five-step process to determine when revenue should be recognized. The five-step process focuses on identifying contracts, identifying separate performance obligations, determining transaction price, allocating transaction price to separate performance obligations, and recognizing revenue when the performance obligation is satisfied. Here are some excerpts from companies' annual reports related to revenue recognition.

- **Amazon:** We offer consumer products through our online and physical stores. Revenue is recognized when control of the goods is transferred to the customer, which generally occurs upon our delivery to a third-party carrier or, in the case of an Amazon delivery, to the customer.
- **Chevron:** The company accounts for each delivery order of crude oil, natural gas, petroleum, and chemical products as a separate performance obligation. Revenue is recognized when the performance obligation is satisfied, which typically occurs at the point in time when control of the product transfers to the customer. Payment is generally due within 30 days of delivery. The company accounts for delivery transportation as a fulfillment cost, not a separate performance obligation.
- **General Mills:** Our revenues primarily result from contracts with customers, which are generally short-term and have a single performance obligation—the delivery of product. We recognize revenue for the sale of packaged foods at the point in time when our performance obligation has been satisfied and control of the product has transferred to our customer, which generally occurs when the shipment is accepted by our customer. Sales include shipping and handling charges billed to the customer and are reported net of variable consideration and consideration payable to our customers.

WHY is the proper accounting for revenue so important?

Without revenue that is stable or increasing, it is unlikely that companies will be profitable in the long run. Revenue (often referred to as the top line) is considered by many to be as important as the bottom line (net income), which may not be sustainable. However, in one survey, financial executives noted that the revenue recognition process is increasingly more complex to manage, more prone to error, and more material to financial statements compared to other areas in financial reporting. The report also identified revenue recognition as a top fraud risk and, that regardless of the accounting rules followed, the risk of errors and inaccuracies in revenue reporting is significant.

HOW do companies account for revenues?

The key objective in the accounting for revenue is to depict the transfer of goods or services to customers in the amount that reflects the consideration that the company receives or expects to receive in exchange for these goods or services (the transaction price). Following from this key objective, the revenue recognition principle is to recognize revenue in the accounting period when the performance obligation is satisfied. A company satisfies its performance obligation when the customer obtains control of the good or service.

The concept of change in control is the deciding factor in determining when a performance obligation is satisfied. The customer controls the product or service when it can direct the use of and obtain substantially all the remaining benefits from the asset or service. Control also includes the customers' ability to prevent other companies from directing the use of, or receiving the benefits, from the asset or service. Through application of the comprehensive five-step model by all companies, the comparability and consistency in reporting revenue should be enhanced.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 17.1 Discuss the fundamental concepts related to revenue recognition and measurement.	**17.1 Fundamentals of Revenue Recognition** • Background • Revenue recognition standard • Example of five-step process	**Example** See the BEAN example in the text discussion.
LO 17.2 Explain and apply the five-step revenue recognition process.	**17.2 The Five-Step Process Revisited** • Identifying the contract with customers • Identifying separate performance obligations • Determining the transaction price • Allocating the transaction price • Satisfying performance obligations	**Examples** 17.1 Contracts 17.2 Collectibility 17.3 Separate Performance Obligations 17.4 Not Separate Performance Obligations 17.5 Variable Consideration 17.6 Revenue Constraint 17.7 Extended Payments 17.8 Volume Discount 17.9 Transaction Price Allocation 17.10 Multiple Performance Obligations I 17.11 Multiple Performance Obligations II 17.12 Timing of Recognition Put It into Practice LO 17.2 Apply the Five-Step Model
LO 17.3 Apply the five-step process to major revenue recognition issues.	**17.3 Revenue Recognition Issues** • Sales returns and allowances • Repurchase agreements • Bill-and-hold arrangements • Principal-agent relationships • Consignments • Warranties • Nonrefundable upfront fees	**Examples** 17.13 Returns and Allowances 17.14 Repurchase Agreement 17.15 Bill and Hold 17.16 Principal-Agent 17.17 Consignment 17.18 Warranties 17.19 Upfront Fee Put It into Practice LO 17.3 Account for Revenue Issues
LO 17.4 Describe presentation and disclosure regarding revenue.	**17.4 Presentation and Disclosure** • Presentation • Disclosure	**Examples** 17.20 Contract Asset 17.21 Contract Liability 17.22 Contract Modification 17.23 Contract Costs

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

17.1 Fundamentals of Revenue Recognition

LEARNING OBJECTIVE 1

Discuss the fundamental concepts related to revenue recognition and measurement.

Background

Revenue is one of, if not the most, important measures of financial performance that a company reports. Revenue provides insights into a company's past and future performance and is a significant driver of other performance measures, such as EBITDA (earnings before interest, taxes, depreciation, and amortization), net income, and earnings per share. Therefore, establishing robust guidelines for recognizing revenue is a standard-setting priority.

Most revenue transactions pose few problems for revenue recognition. That is, most companies initiate and complete transactions at the same time. However, not all transactions are that simple. For example, consider a cell phone contract between a company such as **Verizon** and a customer. Verizon often provides a customer with a package that may include a smartphone and unlimited talk, text, and data using high-speed data transmission. In addition, Verizon may include some perks like access to different streaming services like **Disney+**. At the same time, the customer may pay for these services in a variety of ways, possibly receiving a discount on the smartphone and then paying higher prices for connection fees and so forth. In some cases, depending on the package purchased, the company may provide free upgrades in subsequent periods. How, then, should Verizon report the various pieces of this sale? The answer is not obvious.

The FASB issued a standard on revenue recognition entitled *Revenue from Contracts with Customers*. [1] (See the FASB Codification References near the end of the chapter.) To address the inconsistencies and weaknesses of the previous approaches, this comprehensive revenue recognition standard applies to a wide range of transactions and industries. This new standard improves GAAP by:

1. Providing a more robust framework for addressing revenue recognition issues.
2. Improving comparability of revenue recognition practices across entities, industries, jurisdictions, and capital markets.
3. Simplifying the preparation of financial statements by reducing the number of requirements to which companies must refer.
4. Requiring enhanced disclosures to help financial statement users better understand the amount, timing, and uncertainty of revenue that is recognized. [2]

Revenue Recognition Standard

The revenue standard adopts an **asset-liability approach** as the basis for revenue recognition. The asset-liability approach recognizes and measures revenue based on changes in assets and liabilities. The FASB decided that focusing on the following brings more discipline to the measurement of revenue.

- The recognition and measurement of assets and liabilities.
- Changes in those assets or liabilities over the life of the contract.

Underlying Concepts

The asset-liability approach is consistent with the conceptual framework approach to recognition.

Under the asset-liability approach, companies account for revenue based on the asset or liability arising from contracts with customers. Companies analyze contracts with customers because contracts initiate revenue transactions. Contracts indicate the terms of the transaction, provide the measurement of the consideration, and specify the promises that must be met by each party (see **Underlying Concepts**).

Illustration 17.1 shows the key concepts related to this new standard on revenue recognition. The new standard first identifies the key objective of revenue recognition, followed by a five-step process that companies should use to ensure that revenue is measured and reported correctly.

ILLUSTRATION 17.1 Key Concepts of Revenue Recognition

Key Objective

Recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration that the company receives, or expects to receive, in exchange for these goods or services.

Five-Step Process for Revenue Recognition

1. Identity the contract with customers.
2. Identify the separate performance obligations in the contract.
3. Determine the transaction price.
4. Allocate the transaction price to the separate performance obligations.
5. Recognize revenue when each performance obligation is satisfied.

Revenue Recognition Principle

Recognize revenue in the accounting period when the performance obligation is satisfied.

The culmination of the process is the **revenue recognition principle**, which states that revenue is recognized when the performance obligation is satisfied. We examine all steps in the five-step process in the following section.

Example of the Five-Step Process: BEAN

To provide an application of the basic principles of the five-step revenue recognition model, we use a coffee, wine, and bakery business called BEAN. BEAN is located in the Midwest and serves gourmet coffee, espresso, lattes, teas, and smoothies. It also sells pastries, coffee beans, other food products, wine, and beer.

Identifying the Contract with Customers—Step 1

Assume that Tyler Angler orders a large cup of black coffee costing $3 from BEAN. Tyler gives $3 to a BEAN barista, who pours the coffee into a large cup and gives it to Tyler.

QUESTION **How much revenue should BEAN recognize on this transaction?**

Step 1 We first must determine whether a valid contract exists between BEAN and Tyler. Here are the components of a valid contract and how it affects BEAN and Tyler.

1. **The contract has commercial substance:** Tyler gives cash for the coffee.
2. **The parties have approved the contract:** Tyler agrees to purchase the coffee, and BEAN agrees to sell it.
3. **Identification of the rights of the parties is established:** Tyler has the right to the coffee, and BEAN has the right to receive $3.
4. **Payment terms are identified:** Tyler agrees to pay $3 for the coffee.
5. **It is probable that the consideration will be collected:** BEAN received $3 before it delivered the coffee. [3][1]

From this information, it appears that BEAN and Tyler have a valid contract with one another.

[1]BEAN disregards revenue guidance for a contract that is wholly unperformed and for which each party can unilaterally terminate the contract without compensation.

Step 2 The next step is to identify BEAN's performance obligation(s), if any. The answer is straightforward—BEAN has a performance obligation to provide a large cup of coffee to Tyler. BEAN has no other performance obligation for any other good or service.

Step 3 BEAN must determine the transaction price related to the sale of the coffee. The price of the coffee is $3, and no discounts or other adjustments are available. Therefore, the transaction price is $3.

Step 4 BEAN must allocate the transaction price to all performance obligations. Given that BEAN has only one performance obligation, no allocation is necessary.

Step 5 Revenue is recognized when the performance obligation is satisfied. BEAN satisfies its performance obligation when Tyler obtains control of the coffee. The following conditions are indicators that control of the coffee has passed to Tyler.

a. BEAN has the right to payment for the coffee.

b. BEAN has transferred legal title to the coffee.

c. BEAN has transferred physical possession of the coffee.

d. Tyler has significant risks (e.g., he might spill the coffee) and rewards of ownership (he gets to drink the coffee).

e. Tyler has accepted the asset.

SOLUTION **BEAN should recognize $3 in revenue from this transaction when Tyler receives the coffee.**

Identifying Separate Performance Obligations—Step 2

The following day, Tyler orders another large cup of coffee for $3 and also purchases two bagels at a price of $5. The barista provides these products and Tyler pays $8.

QUESTION **How much revenue should BEAN recognize on the purchase of these two items?**

Step 1 A valid contract exists as it meets the five conditions necessary for a contract to be enforceable as discussed in the previous example.

Step 2 BEAN must determine whether the sale of the coffee and the sale of the two bagels involve one or two performance obligations. In the previous transaction between BEAN and Tyler, this determination was straightforward because BEAN provided a single distinct product (a large cup of coffee) and therefore only one performance obligation existed. However, an arrangement to purchase coffee and bagels may have more than one performance obligation. Multiple performance obligations exist when the following two conditions are satisfied.

1. BEAN must provide a distinct product or service. In other words, BEAN must be able to sell the coffee and the bagels separately from one another.
2. BEAN's products are distinct within the contract. In other words, if the performance obligation is not highly dependent on, or interrelated with, other promises in the contract, then each performance obligation should be accounted for separately. Conversely, if each of these products is interdependent and interrelated, these products are combined and reported as one performance obligation. [4]

The large cup of coffee and the two bagels appear to be distinct from one another and are not highly dependent or interrelated. That is, BEAN can sell the coffee and the two bagels separately, and Tyler benefits separately from the coffee and the bagels.

BEAN should therefore record two performance obligations—one for the sale of the coffee and one for the sale of the bagels.

Step 3 The transaction price is $8 ($3 + $5).

Step 4 BEAN has two performance obligations: to provide (1) a large cup of coffee and (2) the two bagels. Each of these obligations is distinct and not interrelated (and priced separately); no allocation of the transaction price is necessary. That is, the coffee sale is recorded at $3, and the sale of the bagels is priced at $5.

Step 5 BEAN has satisfied both performance obligations when the coffee and bagels are given to Tyler (control of the product has passed to the customer).

SOLUTION BEAN should recognize $8 ($3 + $5) of revenue when Tyler receives the coffee and bagels.

Determining the Transaction Price—Step 3

BEAN decides to provide an additional incentive to its customers to shop at its store. BEAN roasts its own coffee beans and sells the beans wholesale to grocery stores, restaurants, and other commercial companies. In addition, it sells the coffee beans at its retail location. BEAN is interested in stimulating sales of its Smoke Jumper coffee beans on Tuesdays, a slow business day for the store. Normally, these beans sell for $10 for a 12-ounce bag, but BEAN decides to cut the price by $1 when customers buy them on Tuesdays (the discounted price is now $9 per bag). Tyler has come to the store on a Tuesday, decides to purchase a bag of Smoke Jumper beans, and pays BEAN $9.

QUESTION How much revenue should BEAN recognize on this transaction?

Step 1 As in our previous examples, with the sale of a large cup of coffee or the sale of a large cup of coffee and two bagels, a valid contract exists. The same is true for the sale of Smoke Jumper beans as well.

Step 2 The identification of the performance obligation is straightforward. BEAN has a performance obligation to provide a bag of Smoke Jumper coffee beans to Tyler. BEAN has no other performance obligation to provide a product or service.

Step 3 The transaction price for a bag of Smoke Jumper beans sold to Tyler is $9, not $10. The transaction price is the amount that a company expects to receive from a customer in exchange for transferring goods and services. [5] The transaction price in a contract is often easily determined because the customer agrees to pay a fixed amount to the company over a short period of time. In other contracts, companies must consider adjustments such as when they make payments or provide some other consideration to their customers (e.g., a coupon) as part of a revenue arrangement.[2]

Step 4 BEAN allocates the transaction price to the performance obligations. Given that there is only one performance obligation, no allocation is necessary.

Step 5 BEAN has satisfied the performance obligation, as control of the product has passed to Tyler.

SOLUTION BEAN should recognize $9 of revenue when Tyler receives the Smoke Jumper coffee beans.

Allocating the Transaction Price to Separate Performance Obligations—Step 4

For revenue arrangements with multiple performance obligations, BEAN might be required to allocate the transaction price to more than one performance obligation in the contract. If an allocation is needed, the transaction price is allocated to the various performance obligations based on their relative standalone selling prices. If this information is not available, companies should use their best estimate of what the good or service might sell for as a standalone unit. [6]

BEAN wants to provide even more incentive for customers to buy its coffee beans, as well as purchase a cup of coffee. BEAN therefore offers customers a $2 discount on the purchase of a large cup of coffee when they buy a bag of its premium Motor Moka beans (which normally sell for $12) at the same time. Tyler decides this offer is too good to pass up and buys a bag of Motor Moka beans for $12 and a large cup of coffee for $1. As indicated earlier, a large cup of coffee normally retails for $3 at BEAN.

[2]We provide expanded discussion and examples of variation in transaction price, including variable consideration, later in the chapter.

QUESTION **How much revenue should BEAN recognize on the sale of these two items?**

Step 1 In our previous situations, valid contracts have existed. The same is also true for the sale of a bag of Motor Moka beans and the large cup of coffee.

Step 2 The bag of Motor Moka beans and the large cup of coffee are distinct from one another and are not highly dependent on or highly interrelated with the other. BEAN can sell a bag of the Motor Moka beans and a large cup of coffee separately. Furthermore, Tyler benefits separately from both the large cup of coffee and the Motor Moka coffee beans.

Step 3 BEAN's transaction price is $13 ($12 for the bag of Motor Moka beans and $1 for the large cup of coffee).

Step 4 BEAN allocates the transaction price to the two performance obligations based on their relative standalone selling prices. The standalone selling price of a bag of Motor Moka beans is $12 and the large cup of coffee is $3. The allocation of the transaction price of $13 is as follows.

Product	Standalone Selling Price	Percentage	Allocated Amount
Motor Moka beans (one bag)	$12	80% ($12 ÷ $15)	$10.40 ($13 × .80)
Large cup of coffee	3	20 ($3 ÷ $15)	2.60 ($13 × .20)
Total	$15	100%	$13.00

As indicated, the total transaction price ($13) is allocated as $10.40 to the bag of Motor Moka beans and $2.60 to the large cup of coffee.

Step 5 BEAN has satisfied both performance obligations as control of the bag of Motor Moka beans and the large cup of coffee has passed to Tyler.

SOLUTION **BEAN should recognize revenue of $13, comprised of revenue from the sale of the Motor Moka beans at $10.40 and the sale of the large cup of coffee at $2.60.**

Recognizing Revenue When (or as) Each Performance Obligation Is Satisfied—Step 5

As indicated in the examples presented, BEAN satisfied its performance obligation(s) when Tyler obtained control of the product(s). Change in control is the deciding factor in determining when a performance obligation is satisfied. A customer controls the product or service when the customer has the ability to direct the use of and obtain substantially all the remaining benefits from the product. Control also includes Tyler's ability to prevent other companies from directing the use of, or receiving benefits from, the coffee or coffee beans. As discussed earlier, the indicators that Tyler has obtained control are as follows.

a. BEAN has the right to payment for the coffee.
b. BEAN has transferred legal title to the coffee.
c. BEAN has transferred physical possession of the coffee.
d. Tyler has significant risks and rewards of ownership.
e. Tyler has accepted the asset.[3]

17.2 The Five-Step Process Revisited

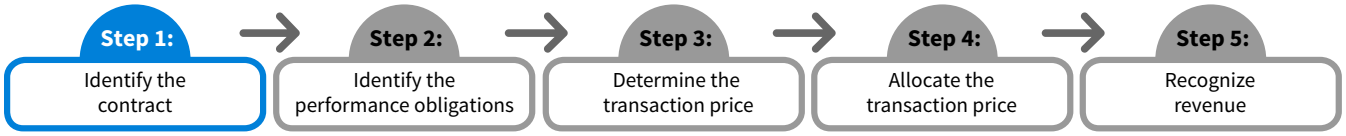
LEARNING OBJECTIVE 2

Explain and apply the five-step revenue recognition process.

The BEAN examples provide a basic understanding of the five-step process used to recognize revenue. We now discuss more technical issues related to the implementation of these five steps.

[3]While in the BEAN example recognition occurred at a point in time, in certain cases, companies satisfy performance obligations over a period of time. We address the criteria for determining point-in-time versus over-time recognition later in the chapter.

Identifying the Contract with Customers—Step 1



A **contract** is an agreement between two or more parties that creates enforceable rights or obligations.

- Contracts can be written, oral, or implied from customary business practice (such as the BEAN contract with Tyler).
- Revenue is recognized only when a valid contract exists.

On entering into a contract with a customer, a company obtains rights to receive consideration from the customer and assumes obligations to transfer goods or services to the customer (performance obligations). The combination of those rights and performance obligations gives rise to a (net) asset or (net) liability.

In some cases, there are multiple contracts related to an arrangement. Accounting for each contract may or may not occur, depending upon the circumstances. These situations often develop when not only a product is provided but some type of service is performed as well. As in the BEAN example, the conditions for a valid a contract are shown in **Illustration 17.2**.

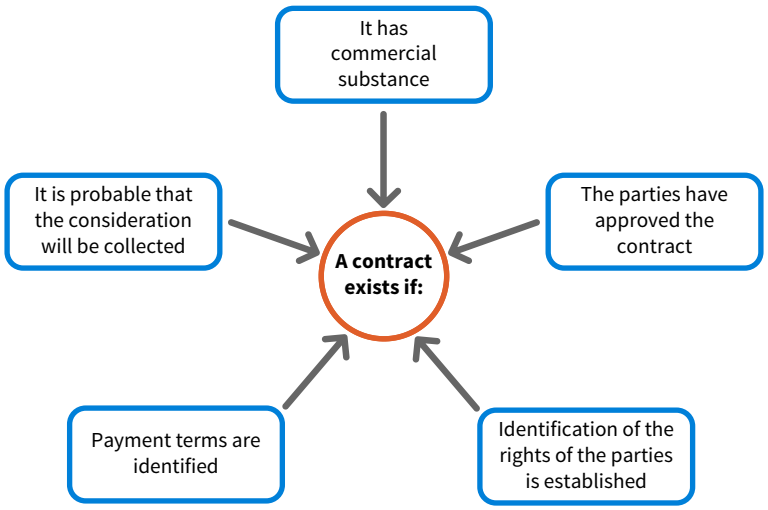

It has commercial substance
It is probable that the consideration will be collected
The parties have approved the contract
A contract exists if:
Payment terms are identified
Identification of the rights of the parties is established

ILLUSTRATION 17.2 Contract Criteria

If the contract is wholly unperformed and each party can unilaterally terminate the contract without compensation, then revenue should not be recognized until one or both of the parties have performed.

Example 17.1 Contracts and Recognition

FACTS On March 1, 2025, Margo Company enters into a contract to transfer a product to Soon Yoon on July 31, 2025. The contract is structured such that Soon Yoon is required to pay the full contract price of $5,000 on August 31, 2025. The cost of the goods transferred is $3,000. Either party can unilaterally terminate the contract without compensation. Margo delivers the product to Soon Yoon on July 31, 2025.

QUESTION What journal entries should Margo Company make in regard to this contract in 2025?

SOLUTION

No entry is required on March 1, 2025, because neither party has performed on the contract. On July 31, 2025, Margo delivers the product and therefore should recognize revenue on that date as it satisfies its performance obligation by delivering the product to Soon Yoon. The journal entry to record the sale and related cost of goods sold by Margo is as follows.

July 31, 2025

Accounts Receivable	5,000	
Sales Revenue		5,000
Cost of Goods Sold	3,000	
Inventory		3,000

After receiving the cash payment on August 31, 2025, Margo makes the following entry.

August 31, 2025

Cash	5,000	
Accounts Receivable		5,000

A key feature of the revenue arrangement is that the contract between the two parties is not recorded (does not result in a journal entry) until one or both of the parties **perform under the contract**. **Until performance occurs, no net asset or net liability exists.**

Regarding **collectibility**, if it is probable that the transaction price will not be collected, this is an indication that the parties are not committed to their obligations. As a result, one of the criteria for the existence of a contract (in Illustration 17.2) is not met, and revenue is therefore not recognized.[4]

Example 17.2
Collectibility

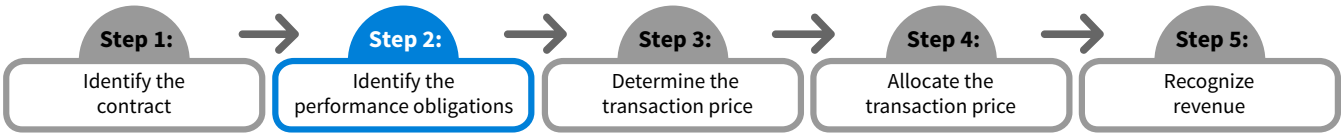
FACTS In November 2025, Specialty Chef sells an assortment of knives to numerous customers for $800,000. Specialty Chef believes that control of the knives has transferred to its customers. In addition, Specialty Chef concludes that collection from its customers is probable. Based on historical trends, approximately 2% of the receivables will not be collectible.

QUESTION How much revenue should Specialty Chef recognize in November?

SOLUTION

Specialty Chef should recognize $800,000 in revenue. It should report the revenue gross (without consideration of the credit risk). It then presents an allowance for any impairment due to bad debts (recognized initially and subsequently in accordance with respective bad debt guidance, as discussed in Chapter 6). An impairment related to bad debts is reported as an operating expense in the income statement.

Identifying Separate Performance Obligations—Step 2



A **performance obligation** is a promise to provide a product or service to a customer. This promise may be explicit, implicit, or possibly based on customary business practice. To

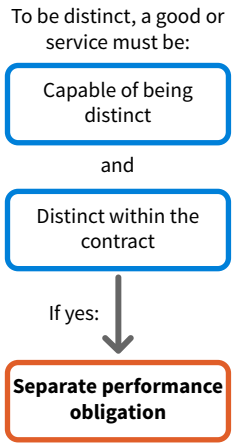
[4]Collectibility is not a consideration for determining when to recognize revenue (Step 5). In determining whether it is probable that a company will collect the amount of consideration to which it is entitled, the company assesses both the customer's ability and intent to pay as amounts become due. [7]

determine whether a performance obligation exists, the company must provide a distinct product or service to the customer.

- A product or service is distinct when a customer benefits from a good or service on its own or together with other readily available resources.
- This situation typically occurs when the company can sell a good or service on a standalone basis (can be sold separately).

For example, BEAN provided a good (a large cup of coffee) on a standalone basis to Tyler. Tyler benefited from this cup of coffee by consuming it.

To determine whether a company has to account for multiple performance obligations, the company's promise to sell the good or service to the customer must be separately identifiable from other promises within the contract.



- That is, the good or service must be distinct within the contract.
- In other words, the **objective is to determine whether the nature of a company's promise is to transfer individual goods and services to the customer or to transfer a combined item (or items) for which individual goods or services are inputs**.

For example, when BEAN sold Tyler a large cup of coffee and two bagels, two performance obligations occurred. In that case, the large cup of coffee had a standalone selling price and the two bagels had a standalone selling price—even though the two promises may be part of one contract.

Conversely, assume that BEAN sold a large latte (comprised of coffee and milk) to Tyler. In this case, BEAN sold two distinct products (coffee and milk), but these two goods are not distinct within the contract. That is, the coffee and milk in the latte are highly interdependent or interrelated within the contract. As a result, the products are combined and reported as one performance obligation.

Example 17.3 Separate Performance Obligations

FACTS Assume that **General Motors** sells a car to Olympic Auto Dealers at a price that includes 6 months of telematics services such as navigation and remote diagnostics. These telematics services are regularly sold on a standalone basis by General Motors for a monthly fee. After the 6-month period, the consumer can renew these services on a fee basis with General Motors.

QUESTION Has General Motors sold one or two products?

SOLUTION

If we look at General Motors' objective, it appears that it is to sell two goods, the car and the telematic services. **Both are distinct (they can be sold separately), and they are not interdependent.** General Motors has two performance obligations in this situation.

Here is another example.

Example 17.4 Not Separate Performance Obligations

FACTS SoftTech Inc. licenses customer-relationship software to Lopez Company. In addition to providing the software itself, SoftTech promises to perform consulting services by extensively customizing the software to Lopez's information technology environment, for total consideration of $600,000.

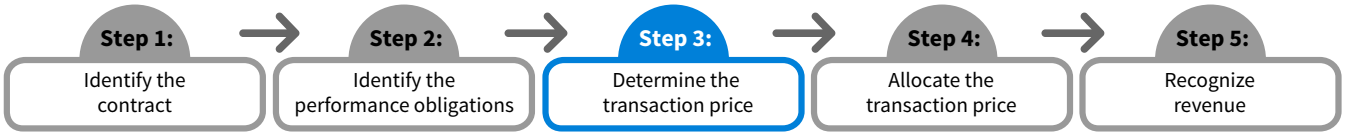
QUESTION Has SoftTech sold one or two products?

SOLUTION

In this case, the objective of SoftTech appears to be to transfer a combined product and service for which individual goods and services are inputs. In other words, SoftTech is providing a significant service by integrating the goods and services (the license and the consulting service) into one combined item for which Lopez has contracted. In addition, the software is significantly customized by SoftTech in accordance with specifications negotiated by Lopez. As a result, **the license and the consulting services are distinct but interdependent,** and therefore should be accounted for as one performance obligation.

In practice, determining whether multiple performance obligations exist can be complex. *For homework purposes, you need to determine the objective of the transaction.* If the objective is to transfer individual goods or services, then account for these performance obligations separately. Indicators that help to understand whether performance obligations should be accounted for separately are (1) the performance obligations have a standalone selling price and (2) the goods or services are not highly interdependent or interrelated.

Determining the Transaction Price—Step 3



The **transaction price** is the amount of consideration that a company expects to receive from a customer in exchange for transferring goods and services. The transaction price in a contract is often easily determined because the customer agrees to pay a fixed amount to the company over a short period of time. In other contracts, companies must consider the following factors. [8]

- Variable consideration.
- Time value of money.
- Noncash consideration.
- Consideration paid or payable to the customer.

Variable Consideration

Underlying Concepts
The expected value approach is also illustrated in Chapter 5 to determine the liability for warranties.

In some cases, the price of a good or service is dependent on future events. These future events might include price increases, volume discounts, rebates, credits, performance bonuses, or royalties. In these cases, the company estimates the amount of variable consideration it will receive from the contract to determine the amount of revenue to recognize.

- Companies use either the **expected value,** which is a probability-weighted amount, or the **most likely amount** in a range of possible amounts to estimate variable consideration (see **Underlying Concepts**).
- Companies select between these two methods based on which approach better predicts the amount of consideration to which a company is entitled. [9]

Illustration 17.3 highlights the issues to be considered in selecting the appropriate method.

ILLUSTRATION 17.3 Estimating Variable Consideration

Expected value: Probability-weighted amount in a range of possible consideration amounts.	**Most likely amount:** The single most likely amount in a range of possible consideration outcomes.
• May be appropriate if a company has a large number of contracts with similar characteristics. • Can be based on a limited number of discrete outcomes and probabilities.	• May be appropriate if the contract has only two possible outcomes.

Example 17.5
Variable Consideration

FACTS Peabody Construction Company enters into a contract with a customer to build a warehouse for $100,000, with a performance bonus of $50,000 that will be paid based on the timing of completion. The amount of the performance bonus decreases by 10% per week for every week beyond the agreed-upon completion date. The contract requirements are similar to contracts that Peabody has performed previously, and management believes that such experience is predictive for this contract. Management estimates that there is a 60% probability that the contract will be completed by the agreed-upon completion date, a 30% probability that it will be completed 1 week late, and only a 10% probability that it will be completed 2 weeks late.

QUESTION How should Peabody account for this revenue arrangement?

SOLUTION

The transaction price should include management's estimate of the amount of consideration to which Peabody will be entitled. Management has concluded that the **probability-weighted method** is the most predictive approach for estimating the variable consideration in this situation:

On time: 60% chance of $150,000 [$100,000 + ($50,000 × 1.0)]	$ 90,000
1 week late: 30% chance of $145,000 [$100,000 + ($50,000 × .90)]	43,500
2 weeks late: 10% chance of $140,000 [$100,000 + ($50,000 × .80)]	14,000
	$147,500

The total transaction price is $147,500 based on the probability-weighted estimate. Management should update its estimate at each reporting date.

Using a most likely outcome approach may be more predictive if a performance bonus is binary (Peabody either will or will not earn the performance bonus), such that Peabody earns either the $50,000 bonus for completion on the agreed-upon date or nothing for completion after the agreed-upon date. In this scenario, if management believes that Peabody will meet the deadline and estimates the consideration using the **most likely outcome**, the total transaction price would be $150,000 (the outcome with 60% probability).

A word of caution—a company only **allocates variable consideration if it is reasonably assured that it will be entitled to that amount**. Companies therefore may only recognize variable consideration if (1) they have experience with similar contracts and are able to estimate the cumulative amount of revenue, and (2) based on experience, it is highly probable that there will not be a significant reversal of revenue previously recognized.[5] If these criteria are not met, revenue recognition is constrained. **[11]**

Example 17.6
Revenue Constraint

FACTS On January 1, Shera Company enters into a contract with Heman Inc. to perform asset-management services for 1 year. Shera receives a quarterly management fee based on a percentage of Heman's assets under management at the end of each quarter. In addition, Shera receives a performance-based incentive fee of 20% of the fund's return in excess of the return of an observable index at the end of the year.

Shera accounts for the contract as a single performance obligation to perform investment-management services for 1 year because the services are interdependent and interrelated. To recognize revenue for satisfying the performance obligation over time, Shera selects an output method of measuring progress toward complete satisfaction of the performance obligation. Shera has had a number of these types of contracts with customers in the past.

QUESTION At what point should Shera recognize the management fee and the performance-based incentive fee related to Heman?

SOLUTION

Shera should record the management fee each quarter as it performs the management of the fund. However, Shera should not record the incentive fee until the end of the year. Although Shera has experience with similar contracts, that experience is not predictive of the outcome of the current contract because the amount of consideration is highly susceptible to volatility in the market. In addition, the incentive fee has a large number and high variability of possible consideration amounts. Therefore, revenue related to the incentive fee is constrained (not recognized) until the incentive fee is known at the end of the year.

[5] Conditions such as one of the following would indicate that the revenue is constrained (or not recognized).

1. The amount of consideration is highly susceptible to factors outside the company's influence. Factors include volatility in a market, the judgment of third parties, weather conditions, and a high risk of obsolescence of the promised good or service.
2. The uncertainty about the amount of consideration is not expected to be resolved for a long period of time.
3. The company's experience (or other evidence) with similar types of performance obligations is limited.
4. The contract has a large number and broad range of possible consideration amounts. **[10]**

Time Value of Money

Timing of payment to the company sometimes does not match the transfer of the goods or services to the customer. In most situations, companies receive consideration after the product is provided or the service performed. In essence, the company provides financing for the customer.

Companies account for the time value of money if the contract **involves a significant financing component**. When a sales transaction involves a significant financing component (i.e., interest is accrued on consideration to be paid over time), the fair value should be determined by discounting the payment using an imputed interest rate. The imputed interest rate is the more clearly determinable of one of the following conditions.

1. The prevailing rate for a similar instrument of an issuer with a similar credit rating.
2. A rate of interest that discounts the nominal amount of the instrument to the current sales price of the goods or services.

The company will report the effects of the financing as interest revenue.

Example 17.7 Extended Payment Terms

FACTS On July 1, 2025, SEK Company sold goods to Grant Company worth $900,000 in exchange for a 4-year, zero-interest-bearing note with a face amount of $1,416,163. The goods have an inventory cost on SEK's books of $590,000. SEK uses the perpetual inventory method.

QUESTIONS (a) How much revenue should SEK Company record on July 1, 2025? (b) How much revenue should it report related to this transaction on December 31, 2025?

SOLUTION

a. SEK should record revenue of $900,000 on July 1, 2025, which is the fair value of the inventory in this case.

b. SEK is also financing this purchase and records interest revenue on the note over the 4-year period. In this case, the interest rate is imputed and is determined to be 12%*. SEK records interest revenue of $54,000 ($.12 \times {}^{6}/_{12} \times \$900{,}000$) at December 31, 2025.

*PV = FV($PVF_{4,i}$)
$900,000 = $1,416,163 ($PVF_{4,i}$)
$PVF_{4,i} = $900,000/$1,416,163
$PVF_{4,i} = .6355$
Using the table for Present Value of 1 for 4 periods, the implicit interest rate is 12%.

To record SEK's sale to Grant Company:

July 1, 2025		
Notes Receivable	1,416,163	
Discount on Notes Receivable		516,163
Sales Revenue		900,000
Cost of Goods Sold	590,000	
Inventory		590,000

To record (accrue) interest revenue at the end of the year:

December 31, 2025		
Discount on Notes Receivable	54,000	
Interest Revenue (.12 × 6/12 × $900,000)		54,000

Excel Solution

n	4
PV	–$900,000
FV	$1,416,163
i	12.0%

RATE(nper, pmt, pv, [fv], [type], [guess])

As a practical expedient, companies are not required to consider the time value of money to determine the transaction price if the time period for payment is less than a year. [12]

Noncash Consideration

Companies sometimes receive consideration in the form of goods, services, or other noncash consideration. When these situations occur, **companies generally recognize revenue on the basis of the fair value of what is received.** For example, assume that Raylin Company

receives common stock of Monroe Company in payment for consulting services. In that case, Raylin Company recognizes revenue in the amount of the fair value of the common stock received. If Raylin cannot determine this amount, then it should estimate the selling price of the services performed and recognize this amount as revenue.

In addition, companies sometimes receive contributions (e.g., donations and gifts). A contribution is often some type of asset (e.g., securities, land, buildings, or use of facilities) but it could be the forgiveness of debt. In these cases, companies recognize revenue for the fair value of the consideration received. Similarly, customers sometimes contribute goods or services, such as equipment or labor, as consideration for goods provided or services performed. This consideration should be recognized as revenue based on the fair value of the consideration received (see Chapter 9).

Consideration Paid or Payable to Customers

Companies often make payments to their customers as part of a revenue arrangement. Consideration paid or payable may include discounts, volume rebates, coupons, free products, or services. In general, these elements reduce the consideration received and the revenue to be recognized.

Example 17.8 Volume Discount

FACTS Sansung Company offers its customers a 3% volume discount if they purchase at least $2 million of its product during the calendar year. On March 31, 2025, Sansung has made sales of $700,000 to Artic Co. In the previous 2 years, Sansung sold over $3,000,000 to Artic in the period April 1 to December 31. Assume that Sansung prepares financial statements quarterly.

QUESTION How much revenue should Sansung recognize for the first 3 months of 2025?

SOLUTION

In this case, Sansung should reduce its revenue by $21,000 ($700,000 × .03) because it is probable that it will provide this rebate. Revenue is therefore $679,000 ($700,000 − $21,000). To not recognize this volume discount overstates Sansung's revenue for the first 3 months of 2025. In other words, the appropriate revenue to be recognized is $679,000, not $700,000.

Given these facts, Sansung makes the following entry on March 31, 2025, to recognize revenue.

Accounts Receivable	679,000	
Sales Revenue		679,000

Assuming that Sansung's customer **meets the discount threshold**, Sansung makes the following entry to record collection of accounts receivable.

Cash	679,000	
Accounts Receivable		679,000

If Sansung's customer **fails to meet the discount threshold**, Sansung makes the following entry to record collection of accounts receivable.

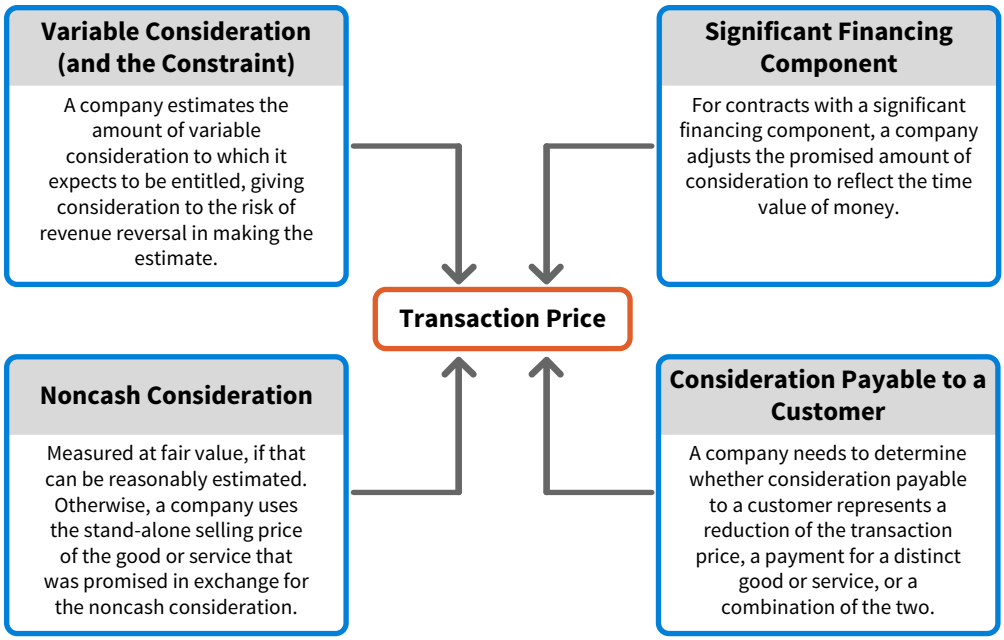
Cash	700,000	
Accounts Receivable		679,000
Sales (Volume) Discounts Forfeited		21,000

As indicated in Chapter 6, Sales Discounts Forfeited is reported in the "Other revenues and gains" section of the income statement.

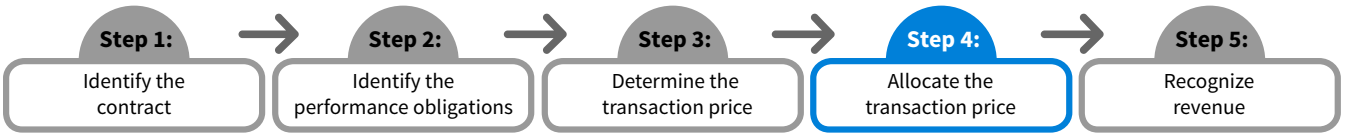
In many cases, companies provide cash discounts to customers for a short period of time (often referred to as prompt settlement discounts). For example, assume that terms are payment due in 60 days. If payment is made within five days, a 2% discount is given, referred to as 2/5, net 60. These prompt settlement discounts should reduce revenues, if material. In most cases, companies record the revenue at full price (gross) and record a sales discount if payment is made within the discount period.

A concise summary of transaction price considerations is provided in **Illustration 17.4**.

ILLUSTRATION 17.4 Transaction Price Summary


Variable Consideration (and the Constraint)
A company estimates the amount of variable consideration to which it expects to be entitled, giving consideration to the risk of revenue reversal in making the estimate.
Significant Financing Component
For contracts with a significant financing component, a company adjusts the promised amount of consideration to reflect the time value of money.
Transaction Price
Noncash Consideration
Measured at fair value, if that can be reasonably estimated. Otherwise, a company uses the stand-alone selling price of the good or service that was promised in exchange for the noncash consideration.
Consideration Payable to a Customer
A company needs to determine whether consideration payable to a customer represents a reduction of the transaction price, a payment for a distinct good or service, or a combination of the two.

Allocating the Transaction Price to Separate Performance Obligations—Step 4



Companies often have to allocate the transaction price to more than one performance obligation in a contract. If an allocation is needed, the transaction price allocated to the various performance obligations is based on their relative fair values. The best measure of fair value is what the company could sell the good or service for on a standalone basis, referred to as the **standalone selling price**. If this information is not available, companies should use their best estimate of what the good or service might sell for as a standalone unit. Illustration 17.5 summarizes the approaches that companies follow (in preferred order of use).

ILLUSTRATION 17.5 Transaction Price—Allocation

Allocation Approach	Implementation
Adjusted market assessment approach	Evaluate the market in which the company sells goods or services and estimate the price that customers in that market are willing to pay for those goods or services. This approach also might include referring to prices from the company's competitors for similar goods or services and adjusting those prices as necessary to reflect the company's costs and margins.
Expected cost plus a margin approach	Forecast expected costs of satisfying a performance obligation and then add an appropriate margin for that good or service.
Residual approach	If the standalone selling price of a good or service is highly variable or uncertain, then a company may estimate the standalone selling price by reference to the total transaction price less the sum or the observable standalone selling prices or other goods or services promised in the contract.[6]

[6]A selling price is highly variable when a company sells the same good or service to different customers (at or near the same time) for a broad range of amounts. A selling price is uncertain when a company has not yet established a price for a good or service and the good or service has not previously been sold. [13]

Example 17.9 Transaction Price Allocation

FACTS Travis Company enters into a contract with a customer to sell Products A, B, and C in exchange for $100,000. Travis Company regularly sells Product A separately, and therefore the standalone selling price is directly observable at $50,000. The standalone selling price of Product B is estimated using the adjusted market assessment approach and is determined to be $30,000. Travis Company decides to use the residual approach to value Product C as it has confidence that Products A and B are valued correctly.

QUESTION How would Travis allocate the selling price to Products A, B, and C?

SOLUTION

The selling price for the products is allocated as follows.

Product	Price	Rationale
A	$ 50,000	Directly observable using standalone selling price.
B	30,000	Directly observable using adjusted market assessment approach.
C	20,000*	Using the residual approach given reliability of the two above measurements.
Total transaction price	$100,000	

*$100,000 − ($50,000 + $30,000)

Examples 17.10 and 17.11 also address measurement issues involved in allocating the transaction price.

Example 17.10 Multiple Performance Obligations I

FACTS Lonnie Company enters into a contract to **build, run, and maintain** a highly complex piece of electronic equipment for a period of 5 years, commencing upon delivery of the equipment. There is a fixed fee for each of the build, run, and maintenance deliverables, and any progress payments made are nonrefundable. It is determined that the transaction price must be allocated to the three performance obligations: building, running, and maintaining the equipment. There is verifiable evidence of the selling price for the building and maintenance but not for running the equipment.

QUESTION What procedure should Lonnie Company use to allocate the transaction price to the three performance obligations?

SOLUTION

The performance obligations relate to building the equipment, running the equipment, and maintaining the equipment. Lonnie can determine verifiable standalone selling prices for the equipment and the maintenance agreements. The company then can make a best estimate of the selling price for running the equipment, using the **adjusted market assessment approach or expected cost plus a margin approach**. Lonnie next applies the proportional standalone selling price method at the inception of the transaction to determine the proper allocation to each performance obligation. Once the allocation is performed, Lonnie recognizes revenue independently for each performance obligation using regular revenue recognition criteria.

If, on the other hand, Lonnie is unable to estimate the standalone selling price for running the equipment because such an estimate is highly variable or uncertain, Lonnie may use a **residual approach**. In this case, Lonnie uses the standalone selling prices of the equipment and maintenance agreements and subtracts these prices from the total transaction price to arrive at a residual value for running the equipment.

Example 17.11 Multiple Performance Obligations II

FACTS Handler Company is an established manufacturer of equipment used in the construction industry. Handler's products range from small to large individual pieces of automated machinery to complex systems containing numerous components. Unit selling prices range from $600,000 to $4,000,000 and are quoted inclusive of installation and training. The installation process does not involve changes to the features of the equipment and does not require proprietary information about the equipment for the installed equipment to perform to specifications. Handler has the following arrangement with Chai Company.

- Chai purchases equipment from Handler for a price of $2,000,000 and chooses Handler to do the installation. Handler charges the same price for the equipment irrespective of whether it does the installation or not. (Some companies do the installation themselves because they either prefer their own employees to do the work or because of relationships with other customers.) The installation service included in the arrangement is estimated to have a standalone selling price of $20,000.
- The standalone selling price of the training sessions is estimated at $50,000. Other companies can also perform these training services.
- Chai is obligated to pay Handler the $2,000,000 upon the delivery and installation of the equipment.
- Handler delivers the equipment on September 1, 2025, and completes the installation of the equipment on November 1, 2025 (transfer of control is complete after installation). Training related to the equipment starts once the installation is completed and lasts for 1 year. The equipment has a useful life of 10 years.

QUESTIONS (a) What are the performance obligations for purposes of accounting for the sale of the equipment? (b) If there is more than one performance obligation, how should the payment of $2,000,000 be allocated to various components?

SOLUTION

a. Handler's primary objective is to sell equipment. The other services (installation and training) can be performed by other parties if necessary. **As a result, the equipment, installation, and training are three separate products or services**. Each of these items has a standalone selling price and is not interdependent.

b. The total revenue of $2,000,000 should be allocated to the three components based on their relative standalone selling prices. In this case, the standalone selling price of the equipment is $2,000,000, the installation fee is $20,000, and the training is $50,000. The total standalone selling price therefore is $2,070,000 ($2,000,000 + $20,000 + $50,000). The allocation is as follows.

Equipment	$1,932,367 [($2,000,000 ÷ $2,070,000) × $2,000,000]
Installation	19,324 [($20,000 ÷ $2,070,000) × $2,000,000]
Training	48,309 [($50,000 ÷ $2,070,000) × $2,000,000]
	$2,000,000

Continuing with Example 17.11, Handler makes the following entry on November 1, 2025, to record both sales revenue and service revenue on the installation, as well as unearned service revenue for the training component.

November 1, 2025

Cash	2,000,000	
Service Revenue (installation)		19,324
Unearned Service Revenue (training)		48,309
Sales Revenue (equipment)		1,932,367

Assuming the cost of the equipment is $1,500,000, the entry to record cost of goods sold is as follows.

November 1, 2025

Cost of Goods Sold	1,500,000	
Inventory		1,500,000

As indicated by these entries, Handler recognizes revenue from the sale of the equipment once the installation is completed on November 1, 2025. In addition, it recognizes revenue for the installation fee because these services have been performed.

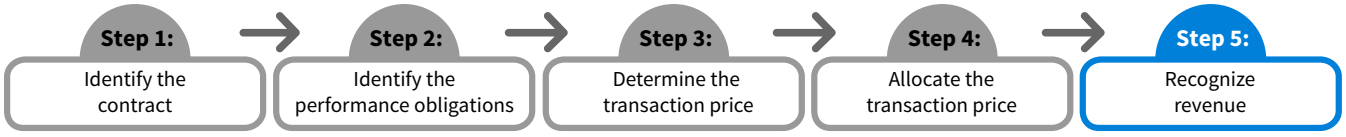
Handler recognizes the training revenues on a straight-line basis starting on November 1, 2025, or $4,026 ($48,309 ÷ 12) per month for one year (unless a more appropriate method such as the percentage-of-completion method—discussed in the next section—is warranted). The journal entry to recognize the training revenue for two months in 2025 is as follows.

December 31, 2025		
Unearned Service Revenue	8,052	
Service Revenue (training) ($4,026 × 2)		8,052

Therefore, Handler recognizes revenue at December 31, 2025, in the amount of $1,959,743 ($1,932,367 + $19,324 + $8,052). Handler makes the following journal entry to recognize the remaining training revenue in 2026, assuming adjusting entries are made at year-end.

December 31, 2026		
Unearned Service Revenue	40,257	
Service Revenue (training) ($48,309 − $8,052)		40,257

Recognizing Revenue When (or as) Each Performance Obligation Is Satisfied—Step 5



A company satisfies its performance obligation when the customer obtains control of the good or service. As indicated in the Handler example (in Example 17.11) and the BEAN example, the concept of change in control is the deciding factor in determining when a performance obligation is satisfied. The customer controls the product or service when it has the ability to direct the use of and obtain substantially all the remaining benefits from the asset or service. Control also includes the customer's ability to prevent other companies from directing the use of, or receiving the benefits, from the asset or service. **Illustration 17.6** summarizes the indicators that the customer has obtained control. **[14]**

ILLUSTRATION 17.6 Change in Control Indicators

1. The company has a right to payment for the asset.
2. The company has transferred legal title to the asset.
3. The company has transferred physical possession of the asset.
4. The customer has significant risks and rewards of ownership.
5. The customer has accepted the asset.

This is a list of indicators, not requirements or criteria. Not all of the indicators need to be met for management to conclude that control has transferred and revenue can be recognized. Management must use judgment to determine whether the factors collectively indicate that the customer has obtained control. This assessment should be focused primarily on the customer's perspective.

Companies satisfy performance obligations either at a point in time or over a period of time. Companies recognize revenue over a period of time if one of the three criteria shown in **Illustration 17.7** is met.

ILLUSTRATION 17.7 Recognition over Time Criteria

Criterion	Example
1. The customer receives and consumes the benefits as the seller performs.	Routine or recurring services, such as cleaning.
2. The customer controls the asset as it is created or enhanced.	Building an asset on a customer's site.

(*continues*)

ILLUSTRATION 17.7 (continued)

Criterion	Example
3. The company does not have an alternative use for the asset created or enhanced and either: **a.** The customer receives benefits as the company performs and therefore the task would not need to be re-performed. **or** **b.** The company has a right to payment and this right is enforceable.	An aircraft manufacturer builds specialty jets to a customer's specifications, such that only the customer can use.

Example 17.12 Timing of Revenue Recognition

FACTS Gomez Software Company enters into a contract with Hurly Company to develop and install customer relationship management (CRM) software. Progress payments are made upon completion of each stage of the contract. If the contract is terminated, then the partly completed CRM software passes to Hurly Company. Gomez Software is prohibited from redirecting the software to another customer.

QUESTION At what point should Gomez Software Company recognize revenue related to its contract with Hurly Company?

SOLUTION

Gomez Software does not create an asset with an alternative use because it is prohibited from redirecting the software to another customer. In addition, Gomez Software is entitled to payments for performance to date and expects to complete the project. Therefore, Gomez Software concludes that the contract meets the criteria for recognizing revenue over time.

A company recognizes revenue from a performance obligation over time by measuring the progress toward completion. The method selected for measuring progress should depict the transfer of control from the company to the customer. **For many service arrangements, revenue is recognized on a straight-line basis because the performance obligation is being satisfied ratably over the contract period.** In other settings (e.g., long-term construction contracts), companies use various methods to determine the extent of progress toward completion. The most common are the cost-to-cost and units-of-delivery methods. The objective of all these methods is to measure the extent of progress in terms of costs, units, or value added.

Companies identify the various measures (costs incurred, labor hours worked, tons produced, floors completed, etc.) and classify them as input or output measures.

- Input measures are efforts devoted to a contract, such as costs incurred and labor hours worked.
- Output measures track results. Results are measured in units of delivery, such as tons produced, floors of a building completed, and miles of a highway completed.

Neither is universally applicable to all long-term projects. Their use requires the exercise of judgment and careful tailoring to the circumstances.

The most popular input measure used to determine the progress toward completion is the cost-to-cost basis. Under this basis, a company measures the percentage of completion by comparing costs incurred to date with the most recent estimate of the total costs required to complete the contract. The percentage-of-completion method is discussed more fully in Appendix 17A, which examines the accounting for long-term contracts.

Summary

Illustration 17.8 provides a summary of the five-step revenue recognition process.

ILLUSTRATION 17.8 Summary of the Five-Step Revenue Recognition Process

Step in Process	Description	Implementation
1. Identify the contract with customers.	A contract is an agreement that creates enforceable rights or obligations.	A company applies the revenue guidance to contracts with customers.
2. Identify the separate performance obligations in the contract.	A performance obligation is a promise in a contract to provide a product or service to a customer. A performance obligation exists if the customer can benefit from the good or service on its own or together with other readily available resources.	A contract may be comprised of multiple performance obligations. The accounting for multiple performance obligations is based on evaluation of whether the product or service is distinct within the contract. If each of the goods or services is distinct but is interdependent and interrelated, these goods and services are combined and reported as one performance obligation.
3. Determine the transaction price.	The transaction price is the amount of consideration that a company expects to receive from a customer in exchange for transferring goods and services.	In determining the transaction price, companies must consider the following factors: (1) variable consideration, (2) time value of money, (3) noncash consideration, and (4) consideration paid or payable to customer.
4. Allocate the transaction price to the separate performance obligations.	If more than one performance obligation exists, allocate the transaction price based on relative fair values.	The best measure of fair value is what the good or service could be sold for on a standalone basis (standalone selling price). Estimates of standalone selling price can be based on (1) adjusted market assessment, (2) expected cost plus a margin approach, or (3) a residual approach.
5. Recognize revenue when each performance obligation is satisfied.	A company satisfies its performance obligation when the customer obtains control of the good or service.	Companies satisfy performance obligations either at a point name or over a period of time. Companies recognize revenue over a period of time if one of the following criteria is met: (1) the customer receives and consumes the benefits as the seller performs, (2) the customer controls the asset as it is created, or (3) the company does not have an alternative use for the asset.

FACTS Ace Appliance Company manufactures compact appliances (stoves, microwaves, refrigerators), which are in demand for use in dormitories, hotel rooms, and efficiency apartments. One of its most popular products is a combination stove/microwave, which can be installed in a space-saving manner under counters or in cabinets. Each unit has a retail price of $800 (the cost to Ace is $350).

Ace sells its products under a written contract, which indicates the customer's and Ace's rights and responsibilities on the sale of each unit (collection on the contract is probable). Ace sells its appliances on a standalone basis directly to customers, as well as provides installation services. Installation services are not specialized, and customers could hire other vendors for these services.

Ace sells 400 stove/microwaves (with installation) to a hotel for use in three of its new properties for a total price of $320,000. Ace provides installation services at a standalone selling price of $100 per

Put It into Practice LO 17.2

Apply the Five-Step Model

unit; the cost to Ace to install is $50 per unit. The stove/microwaves are delivered on April 1, 2025, installation is completed on May 20, 2025, and full payment is made to Ace at delivery of the appliances.

INSTRUCTIONS

a. Evaluate each of the five steps in the revenue recognition process for this revenue arrangement. The sale of the appliance and the installation are accounted for as separate performance obligations.

b. Prepare journal entries for Ace on April 1, 2025, and May 20, 2025.

c. What amount of income related to this arrangement will be included in Ace's 2025 income?

d. Assume now that the customer signs and Ace accepts a note as consideration in the contract (to be paid in 6 months). Briefly discuss how collectibility of the note affects revenue recognition and income measurement for Ace.

SOLUTION

a. With respect to the five-step model:

1. **Identify the contract.** Ace and the customer enter into a written contract, which entails (1) approval and commitment of parties and (2) identification of rights and payment terms. Collection is probable.
2. **Identify performance obligations.** There are two performance obligations: (1) delivery of the combination stove/microwaves and (2) installation. These promises are distinct and, given installation could be done by another vendor and installation has a stand-alone selling price, Ace concludes that installation is separately identifiable from sale of the appliance and should be accounted for as a separate performance obligation.
3. **Determine the transaction price.** The total transaction price is $320,000, as specified in the contract. It is the amount that Ace expects to receive in exchange for the goods and services.
4. **Allocate the transaction price**. The total price should be allocated between the appliance and installation, based on relative standalone selling prices:

Equipment [($320,000 ÷ $360,000*) × $320,000]	$284,444
Installation [($40,000 ÷ $360,000) × $320,000]	35,556
	$320,000

*400 stove/microwaves × $800	$320,000
400 installations × $100	40,000
Total standalone price	$360,000

5. **Recognize revenue.** Control of the stove/microwaves transfers upon delivery on April 1, 2025; Sales Revenue (and Cost of Goods Sold) is recognized on this date. The installation revenue is recognized on May 20, 2025, when installation is completed (Ace satisfies its installation performance obligation).

b. To record payment and delivery of stove/microwaves:

April 1, 2025

Cash	320,000	
Cost of Goods Sold (400 × $350)	140,000	
Inventory		140,000
Sales Revenue		284,444
Unearned Service Revenue (Installation)		35,556

To record installation:

May 20, 2025

Unearned Service Revenue	35,556	
Service Revenue (Installation)		35,556
Installation Expense	20,000	
Cash, Wages, Materials		20,000

c. Income to be included on this arrangement is as follows.

Sales revenue	$284,444	
Cost of goods sold (400 × $350)	140,000	
Gross profit		$144,444
Installation revenue	35,556	
Installation expense (400 × $50)	20,000	
Net profit on installation		15,556
Net income on this arrangement		$160,000

Assuming both delivery and installation occur in the same accounting period, the income effect on the entire arrangement would appear in a single period's income.

d. If not probable that a company will get paid for satisfying a performance obligation, this raises concern about the existence of a valid contract. If collection is not probable, Ace cannot recognize revenue until payment is probable. Only then (or when all amounts are paid), can Ace recognize revenue on this contract.

17.3 Accounting for Revenue Recognition Issues

LEARNING OBJECTIVE 3

Apply the five-step process to major revenue recognition issues.

This section addresses revenue recognition issues found in practice. Most of these issues relate to determining the transaction price (Step 3) and evaluating when control of the product or service passes to the customer (Step 5). The revenue recognition principle and the concept of control are illustrated for the following situations.

- Sales returns and allowances.
- Repurchase agreements.
- Bill and hold.
- Principal-agent relationships.
- Consignments.
- Warranties.
- Nonrefundable upfront fees.

Sales Returns and Allowances

Sales returns and allowances are very common for many companies that sell goods to customers. For example, assume that Fafco Solar sells solar panels to customers on account. Fafco grants customers the right of return for these panels for various reasons (e.g., dissatisfaction with the product). To account for these sales returns and allowances, Fafco should recognize the following.

- Revenue for the transferred solar panels in the amount of consideration to which Fafco is reasonably assured to be entitled (considering the products to be returned or allowance granted).
- An asset, and corresponding adjustment to cost of goods sold, for the goods returned from customers.

Example 17.13
Sales with Returns and Allowances

FACTS On March 5, 2025, Epic Co. sells 100 video games on account to GoGamer for $50 each. The cost of each game is $20. Epic allows GoGamer to return any unused video games within 60 days of purchase. Epic estimates that:

1. Six video games will be returned.
2. The cost of recovering the products will be immaterial.
3. Returned video games are expected to be resold at a profit.

On March 24, 2025, GoGamer returns four of the video games because they were for the wrong gaming system. On March 31, Epic prepares financial statements and determines that it is likely that two more games will be returned.

QUESTIONS (a) What entries should be made on March 5, 24, and 31 by Epic to record the information related to the sale of these video games? (b) How would this information be reported on Epic's income statement and balance sheet related to March 2025?

SOLUTION

a. Epic makes the following entries on March 5 and March 24 as follows.

To record the sale of games and related cost of goods sold:

March 5, 2025

Accounts Receivable	5,000	
Sales Revenue (100 × $50)		5,000
Cost of Goods Sold	2,000	
Inventory (100 × $20)		2,000

To record the return of four video games:

March 24, 2025

Sales Returns and Allowances	200	
Accounts Receivable (4 × $50)		200
Returned Inventory	80	
Cost of Goods Sold (4 × $20)		80

The Sales Returns and Allowances account is a contra account to Sales Revenue. The Returned Inventory account is used to separate returned inventory from regular inventory.

On March 31, 2025, Epic prepares financial statements. As indicated earlier, Epic originally estimated that the most likely outcome was that six video games would be returned. Epic believes the original estimate is correct. Epic should make the following adjusting entries to account for the expected returns.

March 31, 2025

Sales Returns and Allowances	100	
Refund Liability (2 × $50)		100

To record the expected return of the two video games and related reduction in cost of goods sold:

Estimated Inventory Returns	40	
Cost of Goods Sold (2 × $20)		40

The Refund Liability account is the amount Epic is expected to return to GoGamer. The Refund Liability account is updated each reporting period for changes in circumstances and is reported as a liability on Epic's balance sheet. The Estimated Inventory Returns account will generally be added to the Returned Inventory account at the end of the reporting period.

b. For the month of March, Epic's income statement reports the following information.

Sales revenue (100 × $50)	$5,000
Less: Sales returns and allowances ($200 + $100)	300
Net sales	4,700
Cost of goods sold ($2,000 − $80 − $40)	1,880
Gross profit	$2,820

As a result, at the end of the reporting period, the net sales reflects the amount that Epic expects to be entitled to collect.

Epic reports the following information in the balance sheet as of March 31, 2025.

Accounts receivable (net)	$4,800
Returned inventory (including estimated) (6 × $20)	120
Refund liability (2 × $50)	100

As indicated in Example 17.13, at the date of sale, both sales revenue and accounts receivable are recorded at their gross amounts without consideration of sales returns and allowances. Then, at the end of the reporting period, adjusting entries are made, resulting in both sales revenue and accounts receivable being reported for actual and estimated returns and allowances.

As discussed in Chapter 6, most companies follow this adjusting entry approach because estimating net sales at the date of sale is often difficult and time-consuming. By waiting to make the necessary adjusting entries at the end of the reporting period, information related to actual sales returns and allowances is available, and a company still achieves the FASB's objective of reporting accounts receivable and sales revenue at the amount the company is entitled to receive, and inventories and cost of goods sold at cost.

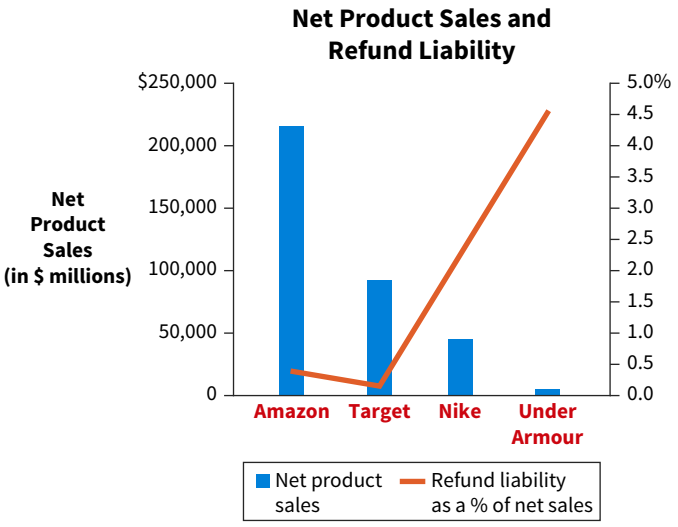
Analytics in Action: Are You Going to Keep That?

Consider the number of times you have ordered a product online with the comfort of knowing you can return it, no questions asked, if you change your mind. Do you want a red shirt or blue? Medium or large? How about you buy them all, try them on at home, and only keep what you like best? Sound familiar? In one recent year, U.S. consumers returned $428 billion of goods, a return rate of 10.6%!

Estimated future sales returns is a material amount on the financial statements, with a direct impact to the bottom line. So, how do companies estimate these amounts? Using vast amounts of historical data, coupled with machine learning, companies can continually improve these important estimates.

With the transactional data housed in a company's accounting system, coupled with advances in technology, a company like **Amazon** can incorporate things like product type, sales price, product color or size, time of year, or geographic location of sale to laser in on the estimated amount of returns. And with machine learning, the system gets smarter as more data is accumulated!

The adjacent graph compares net product sales and the refund liability for a select group of retailers. This is just one example of metrics that companies may use to track and estimate their sales returns.



Sources: Company 10K reports; and J. Adler, P. Adhi, J. Chai, M. Singer, S. Touse, and H. Yankelevich, "Returning to Order: Improving Returns Management for Apparel Companies," *McKinsey & Company* (May 25, 2021).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Repurchase Agreements

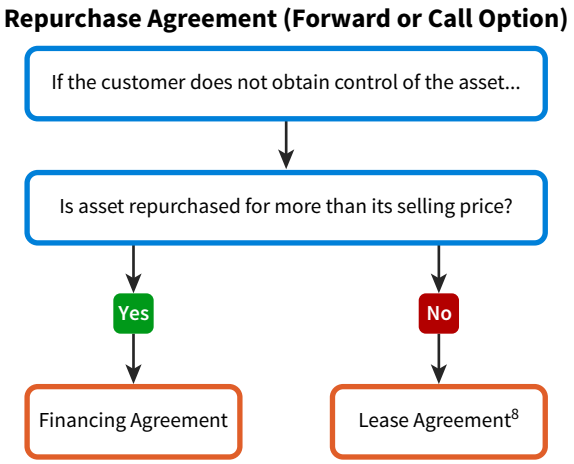
In some cases, companies enter into **repurchase agreements**, which allow them to transfer an asset to a customer but have an unconditional (forward) obligation or unconditional right (call option) to repurchase the asset at a later date. In these situations, the question is whether

the company sold the asset.[7] Generally, companies report these transactions as a financing (borrowing). That is, if the company has a forward obligation or call option to repurchase the asset for an amount **greater than or equal to its selling price,** then the transaction is a financing transaction by the company. As a financing transaction:

1. The company continues to recognize the asset and also recognizes a financial liability for any cash received.
2. Interest is recognized for the difference between the amount received by the company from the original transfer of the asset and the amount to be paid when the asset is repurchased.

Illustration 17.9 summarizes the accounting framework.

ILLUSTRATION 17.9 Repurchase Agreement


Repurchase Agreement (Forward or Call Option)
If the customer does not obtain control of the asset...
Is asset repurchased for more than its selling price?
Yes
No
Financing Agreement
Lease Agreement[8]

Example 17.14 Repurchase Agreement

FACTS Morgan Inc., an equipment dealer, sells equipment on January 1, 2025, to Lane Company for $100,000. It agrees to repurchase this equipment (an unconditional obligation) from Lane Company on December 31, 2026, for a price of $121,000.

QUESTION Should Morgan Inc. record a sale for this transaction?

SOLUTION

For a sale and repurchase agreement, the terms of the agreement need to be analyzed to determine whether Morgan Inc. has transferred control to the customer, Lane Company. As indicated earlier, control of an asset refers to the ability to direct the use of and obtain substantially all the benefits from the asset. Control also includes the ability to prevent other companies from directing the use of and receiving the benefit from a good or service. In this case, Morgan Inc. continues to have control of the asset because it has agreed to repurchase the asset at an amount greater than the selling price. Therefore, this agreement is a financing transaction and not a sale. Thus, the asset is not removed from the books of Morgan Inc.

Assuming that an interest rate of 10% is imputed from the agreement, Morgan Inc. makes the following entries to record this agreement. Morgan Inc. records the financing on January 1, 2025, as follows.

[7] Beyond financing motivations, a company may transfer inventory to another party on a short-term basis to avoid inventory taxes. If the counterparty is able to use the inventory during the transfer period, the transaction may more appropriately be accounted for as a rental agreement.

[8] If the repurchase price is less than the selling price, then the transaction is accounted for as a lease. [15] The accounting for leases is discussed in Chapter 20.

January 1, 2025

Cash	100,000	
Liability to Lane Company		100,000

Morgan Inc. records interest on December 31, 2025, as follows.

December 31, 2025

Interest Expense	10,000	
Liability to Lane Company ($100,000 × .10)		10,000

Morgan Inc. records interest and retirement of its liability to Lane Company as follows.

December 31, 2026

Interest Expense	11,000	
Liability to Lane Company ($110,000 × .10)		11,000
Liability to Lane Company	121,000	
Cash ($100,000 + $10,000 + $11,000)		121,000

Continuing with Example 17.14, now assume that Lane Company **has the option** to require Morgan Inc. to repurchase the asset at December 31, 2026. This option is a put option; that is, Lane Company has the option to put the asset back to Morgan Inc. In this situation:

- Lane Company has control of the asset as it can keep the equipment or sell it to Morgan Inc. or to some other third party.
- The value of a put option increases when the value of the underlying asset (in this case, the equipment) decreases.

In determining how to account for this transaction, Morgan Inc. has to determine whether Lane Company will have an economic incentive to exercise this put option at the end of 2026.

Specifically, Lane Company has a significant economic incentive to exercise its put option if the value of the equipment declines. In this case, the transaction is generally reported as a financing transaction, as shown in Example 17.14. That is, Lane Company will return (put) the equipment back to Morgan Inc. if the repurchase price exceeds the fair value of the equipment. For example, if the repurchase price of the equipment is $150,000 but its fair value is $125,000, Lane Company is better off returning the equipment to Morgan Inc.

Conversely, if Lane Company does not have a significant economic incentive to exercise its put option, then the transaction should be reported as a sale of a product with a right of return.

Bill-and-Hold Arrangements

A **bill-and-hold arrangement** is a contract under which a company bills a customer for a product, but the company retains physical possession of the product until it is transferred to the customer at a point in time in the future. Bill-and-hold sales result when the buyer is not yet ready to take delivery but does take title and accepts billing. For example, a customer may request a company to enter into such an arrangement because of:

1. Lack of available space for the product.
2. Delays in its production schedule.
3. More than sufficient inventory in its distribution channel. **[16]**

Example 17.15
Bill and Hold

FACTS Butler Company sells $450,000 (cost $280,000) of fireplaces on March 1, 2025, to a local coffee shop, Baristo, which is planning to expand its locations around the city. Under the agreement, Baristo asks Butler to hold these fireplaces in its warehouses until the new coffee shops that will house the fireplaces are ready. Title passes to Baristo at the time the agreement is signed.

QUESTION When should Butler recognize the revenue from this bill-and-hold arrangement?

SOLUTION

When to recognize revenue in a bill-and-hold arrangement depends on the circumstances. Butler determines when it has satisfied its performance obligation to transfer a product by evaluating when Baristo obtains control of that product. For Baristo to have obtained control of a product in a bill-and-hold arrangement, it must meet all of the conditions for change in control plus all of the following criteria.

a. The reason for the bill-and-hold arrangement must be substantive.

b. The product must be identified separately as belonging to Baristo.

c. The product currently must be ready for physical transfer to Baristo.

d. Butler cannot have the ability to use the product or to direct it to another customer.

In this case, assuming that the above criteria were met in the contract, revenue recognition should be permitted at the time the contract is signed. Butler has transferred control to Baristo; that is, Butler has a right to payment for the fireplaces and legal title has transferred.

Butler makes the following entry to record the bill-and-hold sale and related cost of goods sold.

March 1, 2025

Accounts Receivable	450,000	
Sales Revenue		450,000
Cost of Goods Sold	280,000	
Inventory		280,000

Principal-Agent Relationships

In a **principal-agent relationship**, the principal's performance obligation is to provide goods or perform services for a customer. The agent's performance obligation is to arrange for the principal to provide these goods or services to a customer. Examples of principal-agent relationships are as follows.

- Preferred Travel Company (agent) facilitates the booking of cruise excursions by finding customers for Regency Cruise Company (principal).
- **Priceline** (agent) facilitates the sale of various services such as car rentals for **Hertz** (principal).

In these types of situations, amounts collected on behalf of the principal are not revenue of the agent. Instead, revenue for the agent is the amount of the commission it receives (usually a percentage of total revenue).

Example 17.16
Principal-Agent Relationship

FACTS Assume that Fly-Away Travel sells airplane tickets for **British Airways (BA)** to various customers.

QUESTION What are the performance obligations in this situation, and how should revenue be recognized for both the principal and agent?

SOLUTION

The principal in this case is BA, and the agent is Fly-Away Travel. Because BA has the performance obligation to provide air transportation to the customer, it is the principal. Fly-Away Travel facilitates the sale of the airline ticket to the customer in exchange for a fee or commission. Its performance obligation is to arrange for BA to provide air transportation to the customer.

Although Fly-Away collects the full airfare from the customer, it then remits this amount to BA less the commission. Fly-Away therefore should not record the full amount of the fare as revenue on its books—to do so overstates revenue. Its revenue is the commission, not the full price. Control of performing the air transportation is with BA, not Fly-Away Travel.

For Example 17.16, some might argue that there is no harm in letting Fly-Away record revenue for the full price of the ticket and then charging the cost of the ticket against the revenue (often referred to as the **gross method** of recognizing revenue). Others note that this approach overstates the agent's revenue and is misleading. The revenue received is the commission for providing the travel services, not the full fare price (often referred to as the **net approach**). The profession believes the net approach is the correct method for recognizing revenue in a principal-agent relationship.

As a result, the FASB developed a set of indicators to determine when a principal-agent relationship exists:

a. One party (the principal) is primarily responsible for fulfilling the contract.

b. The other party (the agent) does not have inventory risk before or after the customer order, during shipping, or on return.

c. The agent does not have latitude in establishing prices for the other party's goods or services. As a result, the amount that the agent can receive from those goods or services is constrained.[9]

An important feature in deciding whether Fly-Away is acting as an agent is whether the amount it earns is predetermined, being either a fixed fee per transaction or a stated percentage of the amount billed to the customer.

Consignments

A common principal-agent relationship involves consignments. In these cases, manufacturers (or wholesalers) deliver goods but retain title to the goods until they are sold. This specialized method of marketing certain types of products makes use of an agreement known as a **consignment**. Under this arrangement:

- The **consignor** (manufacturer or wholesaler) ships merchandise to the **consignee** (dealer), who is to act as an agent for the consignor in selling the merchandise.
- Both consignor and consignee are interested in selling—the former to make a profit or develop a market, the latter to make a commission on the sale.

The consignee accepts the merchandise and agrees to exercise due diligence in caring for and selling it. The consignee remits to the consignor cash received from customers, after deducting a sales commission and any chargeable expenses. In consignment sales, the consignor uses a

[9]These indicators are not requirements. As a result, management must exercise judgment in this determination. [17]

modified version of the point-of-sale basis of revenue recognition. That is, the consignor recognizes revenue only after receiving notification of the sale.

The consignor carries the merchandise as inventory throughout the consignment, separately classified as Inventory (consignments). **The consignee does not record the merchandise as an asset on its books**. Upon sale of the merchandise, the consignee has **a liability for the net amount due the consignor**. The consignor periodically receives from the consignee a report called **account sales** that shows the merchandise received, merchandise sold, expenses chargeable to the consignment, and the cash remitted. Revenue is then recognized by the consignor.

Example 17.17 Sales on Consignment

FACTS Nelba Manufacturing Co. ships merchandise costing $36,000 on consignment to Best Value Stores. Nelba pays $3,750 of freight costs, and Best Value pays $2,250 for local advertising costs that are reimbursable from Nelba. By the end of the period, Best Value has sold two-thirds of the consigned merchandise for $40,000 cash. Best Value notifies Nelba of the sales, retains a 10% commission, and remits the cash due Nelba.

QUESTION What are the journal entries that the consignor (Nelba) and the consignee (Best Value) make to record this transaction?

SOLUTION

Nelba Mfg. Co. (Consignor)			**Best Value Stores** (Consignee)		
Shipment of consigned merchandise:					
Inventory (consignments)	36,000		No entry (record memo or merchandise received).		
Finished Goods Inventory		36,000			
Payment of freight costs by consignor:					
Inventory (consignments)	3,750		No entry.		
Cash		3,750			
Payment of advertising by consignee:					
No entry until notified.			Receivable from Consignor	2,250	
			Cash		2,250
Sales of consigned merchandise:					
No entry until notified.			Cash	40,000	
			Payable to Consignor		40,000
Notification of sales and expenses and remittance or amount due:					
Cash	33,750		Payable to Consignor	40,000	
Advertising Expense	2,250		Receivable from Consignor		2,250
Commission Expense	4,000		Commission Revenue		4,000
Revenue from Consignment Sales		40,000	Cash		33,750
Adjustment of inventory on consignment for cost of sales:					
Cost of Goods Sold	26,500		No entry.		
Inventory (consignments)		26,500			
[2/3 ($36,000 + $3,750) = $26,500]					

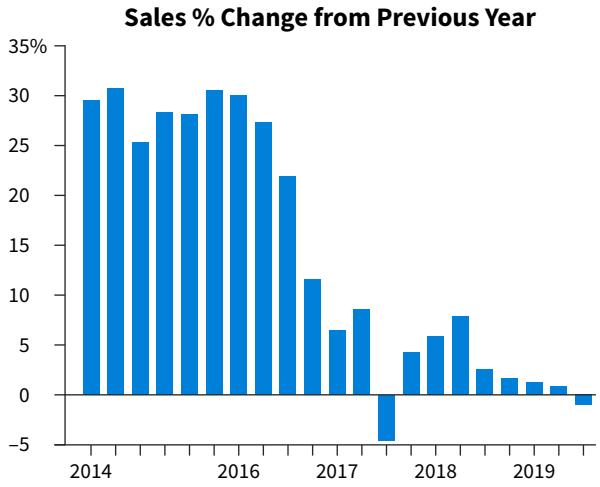
Under the consignment arrangement, the consignor accepts the risk that the merchandise might not sell and relieves the consignee of the need to commit part of its working capital to inventory. Consignors use a variety of systems and account titles to record consignments, but they all share the common goal of postponing the recognition of revenue until it is known that a sale to a third party has occurred. **Consignees only recognize commission revenue.**

Accounting Matters — Did You Meet Your Target?

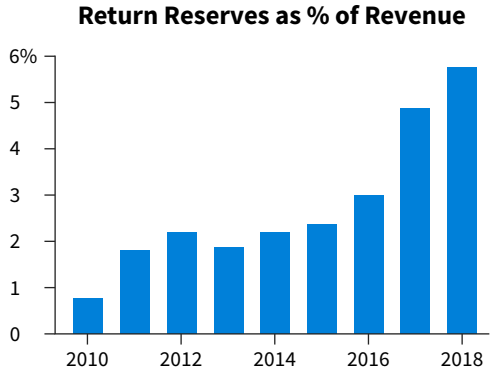
The emphasis on a company's bottom line, or hitting previously disclosed earnings targets, often has a direct impact on the value of the company's stock. While we often hear about net income or earnings per share, the revenue line item has arguably the largest impact on a company's reported net earnings.

In fact, improper timing of revenue recognition is the most common type of accounting that the Securities and Exchange Commission (SEC) has taken action against under its whistleblower program. About 60% of the SEC's actions involve companies who have accelerated revenue recognition (or delayed recognition if they already met earnings targets).

For example, **Under Armour** agreed to pay $9 million to settle an SEC probe into its accounting practices. The probe indicated that the company pulled forward a total of $408 million in existing product orders in 2015 and 2016 that customers requested be shipped in future quarters. This practice ultimately catches up with a company, as it did for Under Armour in 2017 (see the following graph).



Strict guidance on revenue recognition and transparent reporting are a key component of curbing fraud. Careful review of financial metrics can also shed light on potential reporting issues. For Under Armour, striving to maintain sales growth resulted in offering discounts it would not otherwise offer and modifying contracts to extend payment terms. This second graph shows Under Armour's allowance for product returns as a percentage of revenue.



As indicated, while Under Armour was showing a steady increase in sales revenue, its returns were skyrocketing.

Thus, analytic review of financial reports can help shed light on potential negative trends in key revenue metrics, which impact profit margin and receivable turnover.

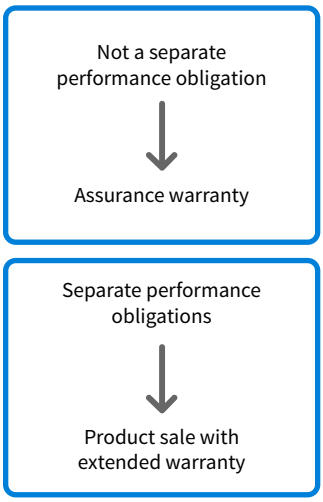
Sources: K. Safdar and A. Viswanatha, "Inside Under Armour's Sales Scramble: 'Pulling Forward Every Quarter'," *Wall Street Journal* (November 14, 2019); and L. Mirabella, "Under Armour Agrees to Pay $9 Million to Settle SEC Probe into Accounting Practices," *The Baltimore Sun* (May 3, 2021).

Warranties

As discussed in Chapter 12, companies often provide one of two types of **warranties** to customers:

1. Warranties that the product **meets agreed-upon specifications in the contract at the time the product is sold**. This type of warranty is included in the sales price of a company's product and is often referred to as an **assurance-type warranty**.
2. Warranties that provide an **additional service beyond the assurance-type warranty**. This warranty is not included in the sales price of the product and is referred to as a **service-type warranty**. As a consequence, it is recorded as a separate performance obligation.

Companies do not record a separate performance obligation for assurance-type warranties. This type of warranty is nothing more than a quality guarantee that the good or service is free from defects at the point of sale. In this case, the sale of the product and the related assurance warranty are one performance obligation as they are interdependent of and interrelated with



each other. The objective for companies that issue an assurance warranty is to provide a combined item (product and a warranty).

These types of obligations should be expensed in the period the goods are provided or services performed. In addition, the company should record a warranty liability. The estimated amount of the liability includes all the costs that the company is expected to incur after sale due to the correction of defects or deficiencies required under the warranty provisions.

Companies sometimes provide customers with an option to purchase a service-type warranty separately. In most cases, these extended warranties provide the customer a service beyond fixing defects that existed at the time of sale. For example, when you purchase a TV, you are entitled to the company's warranty. You will also undoubtedly be offered an extended warranty on the product at an additional cost. These service-type extended warranties represent a **separate service and are an additional performance obligation**.

The service-type warranty is sold separately and therefore has a standalone selling price. In this case, the objective of the company is to sell an additional service to customers. As a result, companies should account for the service warranty as a separate performance obligation. The company recognizes revenue in the period that the service-type warranty is in effect.

Example 17.18
Warranties

FACTS Maverick Company sold 1,000 Rollomatics on October 1, 2025, at total price of $6,000,000, with a warranty guarantee that the product was free of defects. The cost of the Rollomatics is $4,000,000. The term of this assurance warranty is 2 years, which Maverick estimates will cost $80,000. In addition, Maverick sold extended warranties related to 400 Rollomatics for 3 years beyond the 2-year period for $18,000. On November 22, 2025, Maverick incurred labor costs of $3,000 and part costs of $25,000 related to the assurance warranties. Maverick prepares financial statements on December 31, 2025. It estimates that its future assurance warranty costs will total $44,000 at December 31, 2025.

QUESTION What are the journal entries that Maverick Company should make in 2025 related to the sale of the Rollomatics and the assurance and extended warranties?

SOLUTION

Maverick makes the following entries in 2025 related to Rollomatics sold with warranties.

To record the sale of the Rollomatics and the related extended warranties:

October 1, 2025

Cash ($6,000,000 + $18,000)	6,018,000	
Sales Revenue		6,000,000
Unearned Warranty Revenue		18,000

To record the cost of goods sold and reduce the inventory of Rollomatics:

October 1, 2025

Cost of Goods Sold	4,000,000	
Inventory		4,000,000

To record the warranty costs incurred:

November 22, 2025

Warranty Expense	28,000	
Salaries and Wages Payable		3,000
Inventory (parts)		25,000

To record the adjusting entry related to its assurance warranty at the end of the year:

December 31, 2025

Warranty Expense	44,000	
Warranty Liability		44,000

In Example 17.18, Maverick Company makes an adjusting entry on December 31, 2025, to record a liability for the expected warranty costs related to the sale of the Rollomatics. When actual warranty costs are incurred in 2026, the Warranty Liability account is reduced.

In most cases, Unearned Warranty Revenue (related to the service-type warranty) is recognized on a straight-line basis as Warranty Revenue over the three-year period to which it applies. Revenue related to the extended warranty is not recognized until the warranty becomes effective on October 1, 2027. If financial statements are prepared on December 31, 2027, Maverick makes the following entry to recognize revenue.

Unearned Warranty Revenue	1,500	
Warranty Revenue [($18,000 ÷ 36 months) × 3 months]		1,500

Similar to that illustrated in Chapter 12, Maverick Company reduces the Warranty Liability account over the warranty period as the actual warranty costs are incurred.[10]

Nonrefundable Upfront Fees

Companies sometimes receive payments (**upfront fees**) from customers before they deliver a product or perform a service.

- Upfront payments generally relate to the initiation, activation, or setup of a good or service to be provided or performed in the future.
- In most cases, these upfront payments are nonrefundable.

Examples include fees paid for membership in a health club or buying club, and activation fees for phone, Internet, or cable.

Companies must determine whether these nonrefundable advance payments are for products or services in the current period. In most situations, these payments are for future delivery of products and services and should therefore not be recorded as revenue at the time of payment. In some cases, the upfront fee is viewed similar to a renewal option for future products and services at a reduced price. An example would be a health club where once the initiation fee is paid, no additional fee is necessary upon renewal.

Example 17.19
Upfront Fee Considerations

FACTS Erica Felise signs a 1-year contract with Bigelow Health Club. The terms of the contract are that Erica is required to pay a nonrefundable initiation fee of $200 and a membership fee of $50 per month. Bigelow determines that its customers, on average, renew their annual membership two times before terminating their membership.

QUESTION What is the amount of revenue Bigelow Health Club should recognize in the first year?

[10] As with the accounting for sales returns and allowances, the entries shown here reflect a gross (as opposed to net) treatment of the warranty obligation. That is, at the date of sale, Maverick recorded sales with an assurance warranty at the gross amount, without adjustment for expected warranty costs (sometimes referred to as the expense warranty approach). Then at the end of the accounting period when financial statements are prepared, Maverick prepares adjusting entries to record a liability for any remaining estimated warranty expenses (after accounting for actual warranty expenditures). Companies generally do not use the net method because it requires additional analysis and bookkeeping to adjust the warranty liability for unused warranty claims.

SOLUTION

In this case, the membership fee arrangement may be viewed as a single performance obligation (similar services are provided in all periods). That is, Bigelow is providing a discounted price in the second and third years for the same services, and this should be included in the revenue recognized in those periods. Bigelow determines the total transaction price to be $2,000—the upfront fee of $200 and the 3 years of monthly fees of $1,800 ($50 × 36)—and allocates it over the 3 years. In this case, Bigelow would report revenue of $55.56 ($2,000 ÷ 36) each month for 3 years. *Unless otherwise instructed, use this approach for homework problems.*[11]

Summary

Illustration 17.10 provides a summary of issues related to transfer of control and revenue recognition.

ILLUSTRATION 17.10 Summary—Other Revenue Recognition Issues

Issue	Description	Implementation
Sales returns and allowances	Return of product by customer (e.g., due to dissatisfaction with the product) in exchange for refunds, a credit against amounts owed or that will be owed, and/or another product in exchange.	Seller may recognize (a) an adjustment to revenue for products expected to be returned, and (b) an asset (and corresponding adjustment to cost of goods sold) for the goods returned from customers.
Repurchase agreements	Seller has an obligation or right to repurchase the asset at a later date.	Generally, if the company has an obligation or right to repurchase the asset for an amount greater than its selling price, then the transaction is a financing transaction.
Bill-and-hold	Result when the buyer is not yet ready to take delivery but does take title and accept billing.	Revenue is recognized depending on when the customer obtains control of that product.
Principal-agent	Arrangement in which the principal's performance obligation is to provide goods or perform services for a customer. The agent's performance obligation is to arrange for the principal to provide these goods or services to a customer.	Amounts collected on behalf of the principal are not revenue of the agent. Instead, revenue for the agent is the amount of the commission it receives. The principal recognizes revenue when the goods or services are sold to a third-party customer.
Consignments	A principal-agent relationship in which the consignor (manufacturer or wholesaler) ships merchandise to the consignee (dealer), who is to act as an agent for the consignor in selling the merchandise.	The consignor recognizes revenue only after receiving notification of the sale and the cash remittance from the consignee (consignor carries the merchandise as inventory throughout the consignment). The consignee records commission revenue (usually some percentage or the selling price).
Warranties	Warranties can be assurance-type (product meets agreed-upon specifications) or service type (provides additional service beyond the assurance type warranty).	A separate performance obligation is not recorded for assurance-type warranties (considered part or the product; Service-type warranties are recorded as a separate performance obligation. Companies should allocate a portion of the transaction price to service-type warranties, when present.
Nonrefundable upfront fees	Upfront payments generally relate to initiation, activation, or setup activities for a good or service to be delivered in the future.	The upfront payment should be allocated over the periods benefited.

[11]The initiation fee might be viewed as a separate performance obligation (it provides a renewal option at a lower price than normally charged, perhaps with different services). In this situation, in the first period, Bigelow would report revenue of $600 ($50 × 12). The initiation fee (as a separate performance obligation) would then be allocated to years two and three ($100 in each year) unless forfeited earlier.

Put It into Practice LO 17.3

Account for Revenue Issues

FACTS Outback Industries manufactures emergency power equipment. Its most popular generator is a model called the E-Booster, which has a retail price of $1,500 and costs Outback $740 to manufacture. It sells the E-Booster on a standalone basis directly to businesses, as well as provides installation services. Outback also distributes the E-Booster through a consignment agreement with **Home Depot**. Income data for Outback's first quarter of 2025 from operations other than the E-Booster generator are as follows.

Revenues	$6,500,000
Expenses	4,350,000

Outback has the following information related to four E-Booster revenue arrangements during the first quarter of 2025.

1. Outback entered into an arrangement with the Grocers Co-op in eastern Minnesota to deliver E-Boosters for the meat lockers in the grocers' stores. Outback provides a 5% volume discount for E-Boosters purchased by Grocers Co-op if at least $450,000 of E-Boosters are purchased during 2025. By March 31, 2025, Outback has made sales of $360,000 ($1,500 × 240 generators) to Grocers Co-op. Based on prior experience with this promotion in two neighboring states, the discount threshold is met for the year if more than one-half of the target had been met by mid-year.
2. On January 1, 2025, Outback sells 20 E-Boosters to Nick's Liquors. Nick's signs a note due in 6 months at an annual interest rate of 12%. Outback allows Nick's to return any E-Boosters that it cannot use within 120 days and receive a full refund. Based on prior experience, Outback estimates that three units will be returned (using the most likely outcome approach). Outback's costs to recover the products will be immaterial, and the returned generators are expected to be resold at a profit. No E-Boosters have been returned as of March 31, 2025, and Outback still estimates that three units will be returned in the future.
3. Outback sells 30 E-Boosters to a community bank in the Florida Keys to provide uninterrupted power for bank branches with ATMs for a total contract price of $50,000. In addition to the E-Boosters, Outback also provides installation at a standalone selling price of $200 per E-Booster; the cost to Outback to install is $150 per E-Booster. The E-Boosters are delivered and installed on March 1, 2025, and full payment is made to Outback.
4. Outback ships 300 E-Boosters to Home Depot on consignment. By March 31, 2025, Home Depot has sold three-fourths of the consigned merchandise at the listed price of $1,500 per unit. Home Depot notifies Outback of the sales, retains an 8% commission, and remits the cash due to Outback.

INSTRUCTIONS

Determine net income for Outback Industries for the first quarter of 2025. (Ignore taxes.)

SOLUTION

The amount of revenue and expense recognized on each of the arrangements is as follows.

1. Sales revenue [.95 × ($1,500 × 240)]		$342,000	
Cost of goods sold ($740 × 240)		177,600	
Gross profit (income effect of this arrangement)			$164,400
2. Sales revenue (20 × $1,500)		30,000	
Less: Estimated returns (3 × $1,500)		4,500	
Net sales		25,500	
Cost of goods sold (17 × $740)		12,580	
Gross profit		12,920	
Interest revenue ($30,000 × .12 × 3/12)		900	
Net income on this arrangement			13,820
3. The total transaction price of $50,000 is allocated between the equipment and installation. The transaction price for the equipment and installation is allocated based on relative standalone selling prices:			
Equipment: $44,118 = ($45,000 ÷ $51,000*) × $50,000			
Installation: $5,882 = ($6,000 ÷ $51,000) × $50,000			
*$45,000 (30 × $1,500) + $6,000 (30 × $200)			
Sales revenue	$44,118		
Cost of goods sold (30 × $740)	22,200		
Gross profit		$21,918	
Installation revenue	5,882		
Installation expense (30 × $150)	4,500		
Net profit		1,382	
Net income on this arrangement			23,300

4. Sales revenue (225* × $1,500)	$337,500	
Cost of goods sold (225* × $740)	166,500	
Gross profit	171,000	
Commission expense ($337,500 × .08)	27,000	
Net income on this arrangement		144,000
Net income on E-Booster		**$345,520**

*300 × 3/4

Outback Industries' net income for the quarter: $6,500,000 − $4,350,000 + $345,520 = $2,495,520.

17.4 Presentation and Disclosure

LEARNING OBJECTIVE 4

Describe presentation and disclosure regarding revenue.

Presentation

As discussed earlier, companies use an asset-liability approach to recognize revenue. For example, when **General Mills** delivers cereal to **Whole Foods Market** (satisfying its performance obligation), it has a right to consideration from Whole Foods and therefore has a contract asset. If, on the other hand, Whole Foods Market performs first, by prepaying for this cereal, General Mills has a contract liability. Companies must present these contract assets and contract liabilities on their balance sheets.

Contract Assets and Liabilities

Contract assets are of two types:

1. Unconditional rights to receive consideration because the company has satisfied its performance obligation with a customer.
2. Conditional rights to receive consideration because the company has satisfied one performance obligation but must satisfy another performance obligation in the contract before it can bill the customer.

Companies should report unconditional rights to receive consideration as a receivable on the balance sheet. Conditional rights on the balance sheet should be reported separately as contract assets.

Example 17.20
Contract Asset

FACTS On January 1, 2025, Finn Company enters into a contract to transfer Product A and Product B to Obermine Co. for $100,000. The contract specifies that payment of Product A will not occur until Product B is also delivered. In other words, payment will not occur until both Product A and Product B are transferred to Obermine. Finn determines that standalone selling prices are $30,000 for Product A and $70,000 for Product B. Finn delivers Product A to Obermine on February 1, 2025. On March 1, 2025, Finn delivers Product B to Obermine.

QUESTION What journal entries should Finn Company make related to this contract in 2025?

SOLUTION

No entry is required on January 1, 2025, because neither party has performed on the contract. On February 1, 2025, Finn records the following entry.

February 1, 2025

Contract Asset	30,000	
Sales Revenue		30,000

On February 1, Finn has satisfied its performance obligation and therefore reports revenue of $30,000. However, it does not record an accounts receivable at this point because it does not have an unconditional right to receive the $100,000 unless it also transfers Product B to Obermine. In other words, a contract asset occurs generally when a company must satisfy another performance obligation before it is entitled to bill the customer. When Finn transfers Product B on March 1, 2025, it makes the following entry.

March 1, 2025

Accounts Receivable	100,000	
Contract Asset		30,000
Sales Revenue		70,000

A **contract liability** is a company's obligation to transfer goods or services to a customer for which the company has received consideration from the customer.

Example 17.21
Contract Liability

FACTS On March 1, 2025, Henly Company enters into a contract to transfer a product to Propel Inc. on July 31, 2025. It is agreed that Propel will pay the full price of $10,000 in advance on April 15, 2025. Henly delivers the product on July 31, 2025. The cost of the product is $7,500.

QUESTION What journal entries are required in 2025?

SOLUTION

No entry is required on March 1, 2025, because neither party has performed on the contract. On receiving the cash on April 15, 2025, Henly records the following entry.

April 15, 2025

Cash	10,000	
Unearned Sales Revenue		10,000

On satisfying the performance obligation on July 31, 2025, Henly records the following entry to record the sale.

July 31, 2025

Unearned Sales Revenue	10,000	
Sales Revenue		10,000

In addition, Henly records cost of goods sold as follows.

Cost of Goods Sold	7,500	
Inventory		7,500

Companies are not required to use the terms "contract assets" and "contract liabilities" on the balance sheet. For example, contract liabilities are performance obligations and therefore more descriptive titles such as unearned service revenue, unearned sales revenue, repurchase liability, and return liability may be used where appropriate. For contract assets, it is important that financial statement users can differentiate between unconditional and conditional rights through appropriate account presentation.

Contract Modifications

Companies sometimes change the contract terms while it is ongoing; this is referred to as a **contract modification**. When a contract modification occurs, companies determine whether a new contract (and performance obligations) results or whether it is a modification of the existing contract.

Separate Performance Obligation A company accounts for a contract modification as a new contract if **both** of the following conditions are satisfied.

- The promised **goods or services are distinct** (i.e., the company sells them separately and they are not interdependent with other goods and services), and
- The company has the right to receive an amount of **consideration that reflects the standalone selling price** of the promised goods or services. [18]

Example 17.22 Contract Modification

FACTS Crandall Co. has a contract to sell 100 products to a customer for $10,000 ($100 per product) at various points in time over a six-month period. After 60 products have been delivered, Crandall modifies the contract by promising to deliver 20 more products for an additional $1,900, or $95 per product (which is the standalone selling price of the products at the time of the contract modification). Crandall regularly sells the products separately.

QUESTION How should Crandall account for this modification?

SOLUTION

In this situation, the contract modification for the additional 20 products is, in effect, a **new and separate contract** because it meets both of the conditions above. That is, it does not affect the accounting for the original contract.

Given a new contract, Crandall recognizes an additional $4,000 [(100 units − 60 units) × $100] related to the original contract terms and $1,900 (20 units × $95) related to the new products. Total revenue after the modification is therefore $5,900 ($4,000 + $1,900).

Prospective Modification What if Crandall Co. (in Example 17.22) determines that the additional products are not a separate performance obligation? This might arise if the new products are not priced at the proper standalone selling price or if they are not distinct. In this situation, companies generally account for the modification using a prospective approach.

Under the prospective approach, Crandall should account for the effect of the change in the period of change as well as future periods if the change affects both. Crandall should not change previously reported results. Therefore, for Crandall, the amount recognized as revenue for each of the remaining products would be a blended price of $98.33, computed as shown in **Illustration 17.11**.

ILLUSTRATION 17.11 Revenue Under Prospective Modification

Consideration for products not yet delivered under original contract ($100 × 40)	$4,000
Consideration (or products to be delivered under the contract modification ($95 × 20)	1,900
Total remaining revenue	$5,900
Revenue per remaining unit ($5,900 ÷ 60) = $98.33	

Under the prospective approach, this computation differs from that in the separate performance obligation approach in that revenue on the remaining units is recognized at the blended price. Total revenue after the modification is therefore $5,900 (60 units × $98.33). **Illustration 17.12** shows the revenue reported under the two contract modification approaches for Crandall Co.

	Revenue Recognized Prior to Modification	Revenue Recognized After Modification	Total Revenue Recognized
Separate performance obligation	$6,000	$5,900	$11,900
No separate performance obligation—prospectively	$6,000	$5,900	$11,900

ILLUSTRATION 17.12
Comparison of Contract Modification Approaches

As indicated, whether a modification is treated as a separate performance obligation or prospectively, the same amount of revenue is recognized before and after the modification. However, under the prospective approach, a blended price ($98.33) is used for sales in the periods after the modification.[12]

Costs to Fulfill a Contract

Companies may also report assets associated with fulfillment costs related to a revenue arrangement. Companies divide fulfillment costs (contract acquisition costs) into two categories:

1. Those that give rise to an asset.
2. Those that are expensed as incurred.

Companies recognize an asset for the incremental costs if these costs are incurred to obtain a contract with a customer. In other words, **incremental costs are those that a company would not incur if the contract had not been obtained** (e.g., selling commissions). Additional examples that give rise to an asset are as follows.

- **Direct labor, direct materials, and allocation of costs that relate directly to the contract.** Such costs include costs of contract management and supervision, insurance, and depreciation of tools and equipment.
- **Costs that generate or enhance resources of the company that will be used in satisfying performance obligations in the future**. Such costs include intangible design or engineering costs that will continue to give rise to benefits in the future.

Other costs that are expensed as incurred include general and administrative costs (unless those costs are explicitly chargeable to the customer under the contract) as well as costs of wasted materials, labor, or other resources to fulfill the contract that were not reflected in the price of the contract. That is, **companies only capitalize costs that are direct, incremental, and recoverable** (assuming that the contract period is more than one year).

Example 17.23
Contract Costs

FACTS Rock Integrators enters into a contract to operate Dello Company's information technology data center for 5 years. Rock Integrators incurs selling commission costs of $10,000 to obtain the contract. Before performing the services, Rock Integrators designs and builds a technology platform that interfaces with Dello's systems. That platform is not transferred to Dello. Dello promises to pay a fixed fee of $20,000 per month. Rock Integrators incurs the following additional costs: design services for the platform $40,000, hardware for the platform $120,000, and testing of data center $100,000.

QUESTION What are Rock Integrators' costs for fulfilling the contract to Dello Company?

[12]Another approach to account for a contract modification is to report the information in a cumulative catch-up manner. In other words, assuming that these new products are part of the original contract, companies adjust the revenue account to reflect the cumulative effect for periods prior to when the modification occurred. An example of a catch-up situation is a long-term construction contract, which is discussed in more detail in Appendix 17A. Use of the prospective approach avoids the complexity of opening up the accounting for previously satisfied performance obligations. However, it ignores any adjustments to revenue that have already been recognized. **[19]** *For homework purposes, unless instructed otherwise, use the prospective approach for modifications that do not result in a separate performance obligation.* Expanded discussion of the prospective and cumulative catch-up (retrospective) approaches to accounting changes is provided in Chapter 21.

SOLUTION

The $10,000 selling commission cost related to obtaining the contract is recognized as an asset. The design services cost of $40,000 and the hardware for the platform of $120,000 are also capitalized. As the technology platform is independent of the contract, the pattern of amortization of this platform may not be related to the terms of the contract. The testing costs are expensed as incurred; in general, these costs are not recoverable.

As a practical expedient, a company recognizes the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that the company otherwise would have recognized is one year or less.

Disclosure

The disclosure requirements for revenue recognition are designed to help financial statement users understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. To achieve that objective, companies disclose qualitative and quantitative information about all of the following.

- **Contracts with customers.** These disclosures include the disaggregation of revenue, presentation of opening and closing balances in contract assets and contract liabilities, and significant information related to their performance obligations.
- **Significant judgments.** These disclosures include judgments and changes in these judgments that affect the determination of the transaction price, the allocation of the transaction price, and the determination of the timing of revenue.
- **Assets recognized from costs incurred to fulfill a contract.** These disclosures include the closing balances of assets recognized to obtain or fulfill a contract, the amount of amortization recognized, and the method used for amortization.

To implement these requirements and meet the disclosure objectives, companies provide a range of disclosures, as summarized in Illustration 17.13. [20][13]

ILLUSTRATION 17.13 Revenue Disclosures

Disclosure Type	Requirements
Disaggregation of revenue	Disclose disaggregated revenue information in categories that depict how the nature, amount, timing, and uncertainty of revenue and cash flows are affected by economic factors. Reconcile disaggregated revenue to revenue for reportable segments.
Reconciliation or contract balances	Disclose opening and closing balances or contract assets (e.g., unbilled receivables) and liabilities (e.g., deferred revenue) and provide a qualitative description or significant changes in these amounts. Disclose the amount of revenue recognized in the current period relating to performance obligations satisfied in a prior period (e.g., from contracts with variable consideration). Disclose the opening and closing balances of trade receivables if not presented elsewhere.
Remaining performance obligations	Disclose the amount of the transaction price allocated to remaining performance obligations not subject to significant revenue reversal. Provide a narrative discussion of potential additional revenue in constrained arrangements.
Costs to obtain or fulfill contracts	Disclose the closing balances or capitalized costs to obtain and fulfill a contract and the amount of amortization in the period. Disclose the method used to determine amortization for each reporting period.
Other qualitative disclosures	Disclose significant judgments and changes in judgments that affect the amount and timing of revenue from contracts with customers. Disclose how management determines the minimum amount of revenue not subject to the variable consideration constraint.

[13] See *PricewaterhouseCoopers Dataline 2013–2014.*

APPENDIX **17A**

Long-Term Construction Contracts

LEARNING OBJECTIVE *5

Apply the percentage-of-completion method for long-term contracts.

Revenue Recognition over Time

For the most part, companies recognize revenue at the point of sale because that is when the performance obligation is satisfied. However, as indicated in the chapter, under certain circumstances companies recognize revenue over time. The most notable context in which revenue is recognized over time is long-term construction contract accounting.

Long-term contracts frequently provide that the seller (builder) may bill the purchaser at intervals, as it reaches various points in the project. Examples of long-term contracts are construction-type contracts, development of military and commercial aircraft, weapons-delivery systems, and space exploration hardware. When the project consists of separable units, such as a group of buildings or miles of roadway, contract provisions may provide for delivery in installments. In that case, the seller would bill the buyer and transfer title at stated stages of completion, such as the completion of each building unit or every 10 miles of road. The accounting records should record sales when installments are "delivered."

A company satisfies a performance obligation and recognizes revenue over time if at least one of the following three criteria is met. **[21]**

1. The customer simultaneously receives and consumes the benefits of the seller's performance as the seller performs.
2. The company's performance creates or enhances an asset (for example, work in process) that the customer controls as the asset is created or enhanced; or
3. The company's performance does not create an asset with an alternative use. For example, the asset cannot be used by another customer. In addition to this alternative use element, at least *one* of the following criteria must be met:
   a. Another company would not need to substantially re-perform the work the company has completed to date if that other company were to fulfill the remaining obligation to the customer.
   b. The company has a right to payment for its performance completed to date, and it expects to fulfill the contract as promised.[14]

Therefore, if criterion 1, 2, or 3 is met, then a company recognizes revenue over time **if it can reasonably estimate its progress toward satisfaction of the performance obligations**. That is, it recognizes revenues and gross profits each period based upon the progress of the construction—referred to as the **percentage-of-completion method**. The company accumulates construction costs plus gross profit recognized to date in an inventory account (Construction in Process), and it accumulates progress billings in a contra inventory account (Billings on Construction in Process).

[14]The right to payment for performance completed to date does not need to be for a fixed amount. However, the company must be entitled to an amount that would compensate the company for performance completed to date (even if the customer can terminate the contract for reasons other than the company's failure to perform as promised). Compensation for performance completed to date includes payment that approximates the selling price of the goods or services transferred to date (for example, recovery of the company's costs plus a reasonable profit margin).

The rationale for using percentage-of-completion accounting is that under most of these contracts the buyer and seller have enforceable rights.

- The buyer has the legal right to require specific performance on the contract.
- The seller has the right to require progress payments that provide evidence of the buyer's ownership interest.

As a result, a continuous sale occurs as the work progresses. Companies should recognize revenue according to that progression.

Alternatively, if the criteria for recognition over time are not met (e.g., the company does not have a right to payment for work completed to date), the company recognizes revenues and gross profit at a point in time, that is, when the contract is completed or implementing an approach referred to as the **cost-recovery (zero-profit) method**. This method recognizes revenue only to the extent of costs incurred that are expected to be recoverable. Only after all costs are incurred is gross profit recognized.[15]

Percentage-of-Completion Method

The **percentage-of-completion method** recognizes revenues, costs, and gross profit as a company makes progress toward completion on a long-term contract. To defer recognition of these items until completion of the entire contract is to misrepresent the efforts (costs) and accomplishments (revenues) of the accounting periods during the contract. In order to apply the percentage-of-completion method, a company must have some basis or standard for measuring the progress toward completion at particular interim dates.

Measuring the Progress Toward Completion

As one practicing accountant wrote, "The big problem in applying the percentage-of-completion method . . . has to do with the ability to make reasonably accurate estimates of completion and the final gross profit." Companies use various methods to determine the **extent of progress toward completion**. The most common are the **cost-to-cost** and **units-of-delivery** methods.

As indicated in the chapter, the objective of all these methods is to measure the extent of progress in terms of costs, units, or value added. Companies identify the various measures (costs incurred, labor hours worked, tons produced, floors completed, etc.) and classify them as input or output measures, as summarized in **Illustration 17A.1**. Neither measure is universally applicable to all long-term projects. Their use requires the exercise of judgment and careful tailoring to the circumstances.

ILLUSTRATION 17A.1
Completion Measures

Measure	Description	Examples
Input	Based on a company's efforts or inputs toward satisfying a performance obligation, relative to the total expected inputs to the satisfaction of that performance obligation.	• Resources consumed • Costs incurred • Time elapsed • Labor hours expended • Machine hours used
Output	Based on direct measurements of the value to the customer of goods or services transferred to date, relative to the remaining goods or services promised under the contract.	• Surveys of performance to date • Appraisals of results achieved • Milestones reached • Time elapsed

[15] In some circumstances (e.g., in the early stages of a contract), a company may not be able to reasonably measure the outcome of a performance obligation, but it expects to recover the costs incurred in satisfying the performance obligation. In these situations, companies recognize revenue only to the extent of the costs incurred until such time that they can reasonably measure the outcome of the performance obligation. This is referred to as the **cost-recovery method**, which is discussed later in this section. [22]

Both input and output measures have disadvantages. The input measure is based on an established relationship between a unit of input and productivity. If inefficiencies cause the productivity relationship to change, inaccurate measurements result. Another potential problem is front-end loading, in which significant upfront costs result in higher estimates of completion. To avoid this problem, companies should disregard some early-stage construction costs—for example, costs of uninstalled materials or costs of subcontracts not yet performed—if they do not relate to contract performance.

Similarly, output measures can produce inaccurate results if the units used are not comparable in time, effort, or cost to complete. For example, using floors (stories) completed can be deceiving. Completing the first floor of an eight-story building may require more than one-eighth the total cost because of the substructure and foundation construction.

The most popular input measure used to determine the progress toward completion is the **cost-to-cost basis**. Under this basis, a company like **Halliburton** measures the percentage of completion by comparing costs incurred to date with the most recent estimate of the total costs required to complete the contract. The formula for the cost-to-cost basis is as follows.

$$\frac{\text{Costs Incurred to Date}}{\text{Most Recent Estimate of Total Costs}} = \text{Percent Complete}$$

Once Halliburton knows the percentage that costs incurred bear to total estimated costs, it applies that percentage to the total revenue or the estimated total gross profit on the contract. The resulting amount is the revenue or the gross profit to be recognized to date, as shown in the following formula.

$$\text{Percent Complete} \times \text{Estimated Total Revenue (or Gross Profit)} = \text{Revenue (or Gross Profit) to Be Recognized to Date}$$

To find the amounts of revenue and gross profit recognized each period, Halliburton subtracts total revenue or gross profit recognized in prior periods, as the following formula shows.

$$\text{Revenue (or Gross Profit) to Be Recognized to Date} - \text{Revenue (or Gross Profit) Recognized in Prior Periods} = \text{Current-Period Revenue (or Gross Profit)}$$

Because **the cost-to-cost method is widely used** (without excluding other bases for measuring progress toward completion), we have adopted it for use in our examples.

Example of Percentage-of-Completion Method—Cost-to-Cost Basis

To illustrate the percentage-of-completion method, assume that Hardhat Construction Company has a contract to construct a $4,500,000 bridge at an estimated cost of $4,000,000. The contract is to start in July 2025, and the bridge is to be completed in October 2027.

The following data pertain to the construction period. (Note that by the end of 2026, Hardhat has revised the estimated total cost from $4,000,000 to $4,050,000.)

	2025	2026	2027
Costs to date	$1,000,000	$2,916,000	$4,050,000
Estimated costs to complete	3,000,000	1,134,000	—
Progress billings during the year	900,000	2,400,000	1,200,000
Cash collected during the year	750,000	1,750,000	2,000,000

Hardhat would compute the percent complete as shown in **Illustration 17A.2**.

ILLUSTRATION 17A.2 Application of Percentage-of-Completion Method, Cost-to-Cost Basis

	2025	2026	2027
Contract price	$4,500,000	$4,500,000	$4,500,000
Less estimated cost:			
Costs to date	1,000,000	2,916,000	4,050,000
Estimated costs to complete	3,000,000	1,134,000	–
Estimated total costs	4,000,000	4,050,000	4,050,000
Estimated total gross profit	$ 500,000	$ 450,000	$ 450,000
Percent complete	25% ($1,000,000 / $4,000,000)	72% ($2,916,000 / $4,050,000)	100% ($4,050,000 / $4,050,000)

On the basis of the data above, Hardhat would make the entries shown in **Illustration 17A.3** to record (1) the costs of construction, (2) progress billings, and (3) collections. These entries appear as summaries of the many transactions that would be entered individually as they occur during the year.

ILLUSTRATION 17A.3 Journal Entries—Percentage-of-Completion Method, Cost-to-Cost Basis

	2025		2026		2027	
To record costs of construction:						
Construction in Process	1,000,000		1,916,000		1,134,000	
Materials, Cash, Payables, etc.		1,000,000		1,916,000		1,134,000
To record progress billings:						
Accounts Receivable	900,000		2,400,000		1,200,000	
Billings on Construction In Process		900,000		2,400,000		1,200,000
To record collections:						
Cash	750,000		1,750,000		2,000,000	
Accounts Receivable		750,000		1,750,000		2,000,000

In this example, the costs incurred to date are a measure of the extent of progress toward completion. To determine this, Hardhat evaluates the costs incurred to date as a proportion of the estimated total costs to be incurred on the project. The estimated revenue and gross profit that Hardhat will recognize for each year are calculated as shown in **Illustration 17A.4**.

	To Date	Recognized in Prior Years	Recognized in Current Year
2025			
Revenues ($4,500,000 × .25)	$1,125,000		$1,125,000
Costs	1,000,000		1,000,000
Gross profit	$ 125,000		$ 125,000
2026			
Revenues ($4,500,000 × .72)	$3,240,000	$1,125,000	$2,115,000
Costs	2,916,000	1,000,000	1,916,000
Gross profit	$ 324,000	$ 125,000	$ 199,000
2027			
Revenues ($4,500,000 × 1.00)	$4,500,000	$3,240,000	$1,260,000
Costs	4,050,000	2,916,000	1,134,000
Gross profit	$ 450,000	$ 324,000	$ 126,000

ILLUSTRATION 17A.4 Percentage-of-Completion Revenue, Costs, and Gross Profit by Year

Illustration 17A.5 shows Hardhat's entries to recognize revenue and gross profit each year and to record completion and final approval of the contract.

	2025		2026		2027	
To recognize revenue and gross profit:						
Construction in Process (gross profit)	125,000		199,000		126,000	
Construction Expenses	1,000,000		1,916,000		1,134,000	
Revenue from Long-Term Contracts		1,125,000		2,115,000		1,260,000
To record completion of the contract:						
Billings on Construction in Process					4,500,000	
Construction in Process						4,500,000

ILLUSTRATION 17A.5 Journal Entries to Recognize Revenue and Gross Profit and to Record Contract Completion—Percentage-of-Completion Method, Cost-to-Cost Basis

Note that **Hardhat debits gross profit (as computed in Illustration 17A.4) to Construction in Process**. Similarly, it credits Revenue from Long-Term Contracts for the amounts computed. Hardhat then debits the difference between the amounts recognized each year for revenue and gross profit to a nominal account, Construction Expenses (similar to Cost of Goods Sold in a manufacturing company). It reports that amount in the income statement as the actual cost of construction incurred in that period. For example, in 2025 Hardhat uses the actual costs of $1,000,000 to compute both the gross profit of $125,000 and the percent complete (25%).

Hardhat continues to accumulate costs in the Construction in Process account, in order to maintain a record of total costs incurred (plus recognized gross profit) to date. Although theoretically a series of "sales" takes place using the percentage-of-completion method, the selling company cannot remove the inventory cost until the construction is completed and transferred to the new owner. Hardhat's Construction in Process account for the bridge would include the summarized entries shown in **Illustration 17A.6** over the term of the construction project.

ILLUSTRATION 17A.6 Content of Construction in Process Account—Percentage-of-Completion Method

Construction in Process

2025 construction costs	$1,000,000	12/31/27	To close completed project	$4,500,000
2025 recognized gross profit	125,000			
2026 construction costs	1,916,000			
2026 recognized gross profit	199,000			
2027 construction costs	1,134,000			
2027 recognized gross profit	126,000			
Total	$4,500,000	Total		$4,500,000

Recall that the Hardhat Construction Company example contained a **change in estimated costs**: In the second year, 2026, it increased the estimated total costs from $4,000,000 to $4,050,000. The change in estimate is accounted for in a **cumulative catch-up manner**, as indicated in the chapter. This is done by first adjusting the percent completed to the new estimate of total costs. Next, Hardhat deducts the amount of revenues and gross profit recognized in prior periods from revenues and gross profit computed for progress to date. That is, it accounts for the change in estimate in the period of change. That way, the balance sheet at the end of the period of change and the accounting in subsequent periods are as they would have been if the revised estimate had been the original estimate.

Financial Statement Presentation—Percentage-of-Completion

Generally, when a company records a receivable from a sale, it reduces the Inventory account. Under the percentage-of-completion method, however, the company continues to carry both the receivable and the inventory. Subtracting the balance in the **Billings account** from Construction in Process avoids double-counting the inventory. During the life of the contract, Hardhat reports in the balance sheet the difference between the Construction in Process and the Billings on Construction in Process accounts. If that amount is a debit, Hardhat reports it **as a current asset**; if it is a credit, it reports it **as a current liability**.

At times, the costs incurred plus the gross profit recognized to date (the balance in Construction in Process) exceed the billings. In that case, Hardhat reports this excess as a current asset entitled "Costs and recognized profit in excess of billings." Hardhat can at any time calculate the unbilled portion of revenue recognized to date by subtracting the billings to date from the revenue recognized to date, as illustrated for 2025 for Hardhat Construction in **Illustration 17A.7**.

ILLUSTRATION 17A.7 Computation of Unbilled Contract Price at 12/31/25

Contract revenue recognized to date: $4,500,000 × $\frac{\$1,000,000}{\$4,000,000}$	$1,125,000
Billings to date	(900,000)
Unbilled revenue	$ 225,000

At other times, the billings exceed costs incurred and gross profit to date. In that case, Hardhat reports this excess as a current liability entitled "Billings in excess of costs and recognized profit."

What happens, as is usually the case, when companies have more than one project going at a time? When a company has a number of projects, costs exceed billings on some contracts and billings exceed costs on others. In such a case, the company segregates the contracts. The asset side includes only those contracts on which costs and recognized profit exceed billings. The liability side includes only those on which billings exceed costs and recognized profit. Separate disclosures of the dollar volume of billings and costs are preferable to a summary presentation of the net difference.

Using data from the bridge example, Hardhat Construction Company would report the status and results of its long-term construction activities in 2025 under the percentage-of-completion method as shown in **Illustration 17A.8**.

Hardhat Construction Company

Income Statement (from illustration 17A.4)		**2025**
Revenue from long-term contracts		$1,125,000
Costs of construction		1,000,000
Gross profit		$ 125,000
Balance Sheet (12/31)		
Current assets		
Accounts receivable ($900,000 − $750,000)		$ 150,000
Inventory		
Construction in process	$1,125,000	
Less: Billings	900,000	
Costs and recognized profit in excess or billings		225,000

ILLUSTRATION 17A.8 Financial Statement Presentation—Percentage-of-Completion Method (2025)

Illustration 17A.9 shows its financial statement presentation in 2026.

Hardhat Construction Company

Income Statement (from Illustration 17A.4)		**2026**
Revenue from long term contracts		$2,115,000
Costs of construction		1,916,000
Gross profit		$ 199,000
Balance Sheet (12/31)		
Current assets		
Accounts receivable ($150,000 + $2,400,000 − $1,750,000)		$ 800,000
Current liabilities		
Billings	$3,300,000	
Less: Construction in process	3,240,000	
Billings in excess of costs and recognized profit		60,000

ILLUSTRATION 17A.9 Financial Statement Presentation—Percentage-of-Completion Method (2026)

In 2027, as shown in **Illustration 17A.10**, Hardhat's financial statements only include an income statement because the bridge project was completed and settled.

Hardhat Construction Company

Income Statement (from Illustration 17A.4)	**2027**
Revenue from long-term contracts	$1,260,000
Costs of construction	1,134,000
Gross profit	$ 126,000

ILLUSTRATION 17A.10 Financial Statement Presentation—Percentage-of-Completion Method (2027)

In addition, Illustration 17A.11 shows the information that Hardhat should disclose in each year.

ILLUSTRATION 17A.11
Percentage-of-Completion Method Note Disclosure

> **Note 1. Summary of significant accounting policies.**
> **Long-Term Construction Contracts.** The company recognizes revenues and reports profits from long-term construction contracts, its principal business under the percentage-of-completion method of accounting. These contracts generally extend for periods in excess or one year. The amounts of revenues and profits recognized each year are based on the ratio of costs incurred to the total estimated costs. Costs included in construction in process include direct materials, direct labor, and project related overhead. Corporate general and administrative expenses are charged to the periods as incurred and are not allocated to construction contracts.

Cost-Recovery (Zero-Profit) Method

LEARNING OBJECTIVE * 6
Apply the cost-recovery method for long-term contracts.

During the early stages of a contract, a company like **Alcatel-Lucent Enterprise** may not be able to estimate reliably the outcome of a long-term construction contract. Nevertheless, Alcatel-Lucent Enterprise is confident that it will recover the contract costs incurred. In this case, Alcatel-Lucent Enterprise uses the **cost-recovery (zero-profit) method**. This method recognizes revenue only to the extent of costs incurred that are expected to be recoverable. Only after all costs are incurred is gross profit recognized.[16]

To illustrate the cost-recovery method for the bridge project illustrated on the preceding pages, Hardhat Construction would report the following revenues and costs for 2025–2027, as shown in Illustration 17A.12.

ILLUSTRATION 17A.12
Cost-Recovery Method Revenue, Costs, and Gross Profit by Year

	To Date	Recognized in Prior Years	Recognized in Current Year
2025			
Revenues (costs incurred)	$1,000,000		$1,000,000
Costs	1,000,000		1,000,000
Gross profit	$ 0		$ 0
2026			
Revenues (costs incurred)	$2,916,000	$1,000,000	$1,916,000
Costs	2,916,000	1,000,000	1,916,000
Gross profit	$ 0	$ 0	$ 0
2027			
Revenues ($4,500,000 × 1.00)	$4,500,000	$2,916,000	$1,584,000
Costs	4,050,000	2,916,000	1,134,000
Gross profit	$ 450,000	$ 0	$ 450,000

Illustration 17A.13 shows Hardhat's entries to recognize revenue and gross profit each year and to record completion and final approval of the contract.

[16]Results from the cost-recovery method are substantially the same as the completed-contract method, which was eliminated under ASC 606. See KPMG, *Revenue Issues in Depth* (May 2016), p. 147.

ILLUSTRATION 17A.13 Journal Entries—Cost-Recovery Method

	2025		2026		2027	
To recognize costs and related expenses:						
Construction Expenses	1,000,000		1,916,000			
Revenue from Long-Term Contracts		1,000,000		1,916,000		
Construction in Process (gross profit)					450,000	
Construction in Expenses					1,134,000	
Revenue from Long-Term Contracts						1,584,000
To record completion of the contract:						
Billings on Construction in Process					4,500,000	
Construction in Process						4,500,000

As indicated, no gross profit is recognized in 2025 and 2026. In 2027, Hardhat then recognizes gross profit and closes the Billings and Construction in Process accounts.

Illustration 17A.14 compares the amount of gross profit that Hardhat Construction would recognize for the bridge project under the two revenue recognition methods.

ILLUSTRATION 17A.14 Comparison of Gross Profit Recognized Under Different Methods

	Percentage-of-Completion	Cost-Recovery
2025	$125,000	$ 0
2026	199,000	0
2027	126,000	450,000

Under the cost-recovery method, Hardhat Construction would report its long-term construction activities as shown in Illustration 17A.15.

ILLUSTRATION 17A.15 Financial Statement Presentation—Cost-Recovery Method

Hardhat Construction

Income Statement		2025	2026	2027
Revenue from long-term contracts		$1,000,000	$1,916,000	$1,584,000
Costs of construction		1,000,000	1,916,000	1,134,000
Gross profit		$ 0	$ 0	$ 450,000
Balance Sheet (12/31)				
Current assets				
Inventories				
Construction in process	$1,000,000			
Less: Billings	900,000			
Costs in excess of billings		$ 100,000		$–0–
Accounts receivable		150,000	$ 800,000	–0–
Current liabilities				
Billings	$3,300,000			
Less: Construction in process	2,916,000			
Billings in excess of costs and recognized profits			$ 384,000	$–0–

Note 1. Summary of significant accounting policies.

Long-Term Construction Contracts. The company recognizes revenues and reports profits from long term construction contracts, its principal business, under the cost-recovery method. These contracts generally extend for periods in excess of one year. Contract costs and billings arc accumulated during the periods of construction, and revenues are recognized only to the extent of costs incurred that are expected to be recoverable. Only after all costs are incurred is net income recognized. Costs included in construction in process include direct material, direct labor, and project related overhead. Corporate general and administrative expenses are charged to the periods as incurred.

Long-Term Contract Losses

LEARNING OBJECTIVE *7

Identify the proper accounting for losses on long-term contracts.

Two types of losses can become evident under long-term contracts:

1. **Loss in the current period on a profitable contract.** This condition arises when, during construction, there is a significant increase in the estimated total contract costs but the increase does not eliminate all profit on the contract. Under the percentage-of-completion method only, the estimated cost increase requires a current-period adjustment of excess gross profit recognized on the project in prior periods. The company records this adjustment as a loss in the current period because it is a change in accounting estimate (discussed in Chapter 21).
2. **Loss on an unprofitable contract.** Cost estimates at the end of the current period may indicate that a loss will result on completion of the **entire** contract. Under both the percentage-of-completion and the cost-recovery methods, the company must recognize in the current period the entire expected contract loss.

The treatment described for unprofitable contracts is consistent with the accounting custom of anticipating foreseeable losses to avoid overstatement of current and future income (conservatism). [23]

Loss in Current Period

To illustrate a loss in the current period on a contract expected to be profitable upon completion, we'll continue with the Hardhat Construction Company bridge project. Assume that on December 31, 2026, Hardhat estimates the costs to complete the bridge contract at $1,468,962 instead of $1,134,000. Assuming all other data are the same as before, Hardhat would compute the percent complete and recognize the loss as shown in Illustration 17A.16. Compare these computations with those for 2026 in Illustration 17A.2. The "percent complete" has dropped, from 72% to 66⅔%, due to the increase in estimated future costs to complete the contract.

ILLUSTRATION 17A.16
Computation of Recognizable Loss, 2026—Loss in Current Period

Cost to date (12/31/26)	$2,916,000
Estimated costs to complete (revised)	1,468,962
Estimated total costs	$4,384,962
Percent complete ($2,916,000 ÷ $4,384,962)	66⅔%
Revenue recognized in 2026	
($4,500,000 × .665) − $1,125,000	$1,867,500
Costs incurred in 2026	1,916,000
Loss recognized in 2026	$ (48,500)

The 2026 loss of $48,500 is a cumulative adjustment of the "excessive" gross profit recognized on the contract in 2025. Instead of restating the prior period, the company absorbs the prior period misstatement entirely in the current period. In this illustration, the adjustment was large enough to result in recognition of a loss.

Hardhat Construction would record the loss in 2026 as follows.

Construction Expenses	1,916,000	
Construction in Process (loss)		48,500
Revenue from Long-Term Contracts		1,867,500

Hardhat will report the loss of $48,500 on the 2026 income statement as the difference between the reported revenue of $1,867,500 and the costs of $1,916,000.[17] **Under the cost-recovery method, the company does not recognize a loss in 2026.** Why not? Because the company still expects the contract **to result in a profit**, to be recognized in the year of completion.

Loss on an Unprofitable Contract

To illustrate the accounting for an **overall loss on a long-term contract**, assume that at December 31, 2026, Hardhat Construction Company estimates the costs to complete the bridge contract at $1,640,250 instead of $1,134,000. Revised estimates for the bridge contract are as follows.

	2025 Original Estimates	2026 Revised Estimates
Contract price	$4,500,000	$4,500,000
Estimated total cost	4,000,000	4,556,250[a]
Estimated gross profit	$ 500,000	
Estimated loss		$ (56,250)

[a]($2,916,000 + $1,640,250)

Under the percentage-of-completion method, Hardhat recognized $125,000 of gross profit in 2025 (see Illustration 17A.4). This amount must be offset in 2026 because it is no longer expected to be realized. In addition, since losses must be recognized as soon as estimable, the company must recognize the total estimated loss of $56,250 in 2026. Therefore, Hardhat must recognize a total loss of $181,250 ($125,000 + $56,250) in 2026.

Illustration 17A.17 shows Hardhat's computation of the revenue to be recognized in 2026.

ILLUSTRATION 17A.17
Computation of Revenue Recognizable, 2026—Unprofitable Contract

Revenue recognized in 2026:		
Contract price		$4,500,000
Percent complete		× .64[a]
Revenue recognizable to date		2,880,000
Less: Revenue recognized prior to 2026		1,125,000
Revenue recognized in 2026		$1,755,000
[a]Cost in date (12/31/26)	$2,916,000	
Estimated cost to complete	1,640,250	
Estimated total costs	$4,556,250	
Percent complete: $2,916,000 ÷ $4,556,250 = 64%		

To compute the construction costs to be expensed in 2026, Hardhat adds the total loss to be recognized in 2026 ($125,000 + $56,250) to the revenue to be recognized in 2026. Illustration 17A.18 shows this computation.

[17]In 2027, Hardhat Construction will recognize the remaining 33½% of the revenue ($1,507,500), with costs of $1,468,962 as expected, and will report a gross profit of $38,538. The total gross profit over the three years of the contract would be $115,038 [$125,000 (2025) − $48,500 (2026) + $38,538 (2027)]. This amount is the difference between the total contract revenue of $4,500,000 and the total contract costs of $4,384,962.

ILLUSTRATION 17A.18 Computation of Construction Expense, 2026—Unprofitable Contract

Revenue recognized in 2026 (computed above)		$1,755,000
Total loss recognized in 2026:		
Reversal of 2025 gross profit	$125,000	
Total estimated loss on the contract	56,250	181,250
Construction cost expensed in 2026		$1,936,250

Hardhat Construction would record the long-term contract revenues, expenses, and loss in 2026 as follows.

Construction Expenses	1,936,250	
Construction in Process (loss)		181,250
Revenue from Long-Term Contracts		1,755,000

At the end of 2026, Construction in Process has a balance of $2,859,750 as shown in **Illustration 17A.19**.[18]

ILLUSTRATION 17A.19 Content of Construction in Process Account at End Of 2026—Unprofitable Contract

Construction in Process			
2025 Construction costs	1,000,000		
2025 Recognized gross profit	125,000		
2026 Construction costs	1,916,000	2026 Recognized loss	181,250
Balance	**2,859,750**		

Under the cost-recovery method, Hardhat also would recognize the contract loss of $56,250 through the following entry in 2026 (the year in which the loss first became evident).

Loss from Long-Term Contracts	56,250	
Construction in Process (loss)		56,250

Just as the Billings account balance cannot exceed the contract price, neither can the balance in Construction in Process exceed the contract price.

- In circumstances where the Construction in Process balance exceeds the billings, the company can deduct the recognized loss from such accumulated costs on the balance sheet.
- That is, under both the percentage-of-completion and the cost-recovery methods, the provision for the loss (the credit) may be combined with Construction in Process, thereby reducing the inventory balance.
- In those circumstances, however (as in the 2026 example above), where the billings exceed the accumulated costs, Hardhat must report separately on the balance sheet, as a current liability, the amount of the estimated loss.

As a result, under both the percentage-of-completion and the cost-recovery methods, Hardhat would take the $56,250 loss, as estimated in 2026, from the Construction in Process account and report it separately as a current liability titled "Estimated liability from long-term contracts."

[18]If the costs in 2027 are $1,640,250 as projected, at the end of 2027 the Construction in Process account will have a balance of $1,640,250 + $2,859,750, or $4,500,000, equal to the contract price. When the company matches the revenue remaining to be recognized in 2027 of $1,620,000 [$4,500,000 (total contract price) − $1,125,000 (2025) − $1,755,000 (2026)] with the construction expense to be recognized in 2027 of $1,620,000 [total costs of $4,556,250 less the total costs recognized in prior years of $2,936,250 (2025, $1,000,000; 2026, $1,936,250)], a zero profit results. Thus, the total loss has been recognized in 2026, the year in which it first became evident.

APPENDIX **17B**

Revenue Recognition for Franchises

LEARNING OBJECTIVE *8

Explain revenue recognition for franchises.

In this appendix, we discuss a common yet unique type of business transaction—franchises. As indicated throughout this chapter, companies recognize revenue when performance obligations in a revenue arrangement are satisfied. **Franchises** represent a challenging area because a variety of performance obligations may exist in a given franchise agreement. As a result, companies must carefully analyze franchise agreements to identify the separate performance obligations, determine when performance obligations are satisfied, and, therefore, when revenue should be recognized.[19]

Four types of franchising arrangements have evolved: (1) manufacturer-retailer, (2) manufacturer-wholesaler, (3) service sponsor-retailer, and (4) wholesaler-retailer. The fastest-growing category of franchising, and the one that has given rise to accounting challenges, is the third category, **service sponsor-retailer**. Included in this category are such industries and businesses as:

- Soft ice cream/frozen yogurt stores (**Tastee Freez**, **TCBY**, **Dairy Queen**).
- Food drive-ins (**McDonald's**, **KFC**, **Burger King**).
- Restaurants (**TGI Friday's**, **Pizza Hut**, **Denny's**).
- Motels (**Holiday Inn**, **Marriott**, **Best Western**).
- Auto rentals (**Avis**, **Hertz**, **National**).
- Others (**H & R Block**, **Meineke Mufflers**, **7-Eleven Stores**, **Kelly Services**).

Franchise companies derive their revenue from one or both of two sources: (1) from the sale of initial franchises and related assets or services, and (2) from continuing fees based on the operations of franchises. The **franchisor** (the party who grants business rights under the franchise) normally provides the **franchisee** (the party who operates the franchised business) with the following services.

1. Assistance in site selection: (a) analyzing location and (b) negotiating lease.
2. Evaluation of potential income.
3. Supervision of construction activity: (a) obtaining financing, (b) designing building, and (c) supervising contractor while building.
4. Assistance in the acquisition of signs, fixtures, and equipment.
5. Bookkeeping and advisory services: (a) setting up franchisee's records; (b) advising on income, real estate, and other taxes; and (c) advising on local regulations of the franchisee's business.
6. Employee and management training.
7. Quality control.
8. Advertising and promotion.

In the past, it was standard practice for franchisors to recognize the entire franchise fee at the date of sale, whether the fee was received then or was collectible over a long period of

[19]Franchises are an example of a license or similar rights to use intellectual property. In such arrangements, a company grants a customer the right to use, but not own, intellectual property of the company. Other examples of intellectual property include (1) software and technology; (2) motion pictures, music, and other forms of media and entertainment; and (3) patents, trademarks, and copyrights. Generally, revenue is recognized in these situations when the customer obtains control of the rights. In some cases, a license is a promise to provide a right, which transfers to the customer at a point in time. In other cases, a license is a promise to provide access to an entity's intellectual property, which transfers benefits to the customer over time. **[24]**

time. Frequently, franchisors recorded the entire amount as revenue in the year of sale, even though many of the services were yet to be performed and uncertainty existed regarding the collection of the entire fee. (In effect, the franchisors were counting their fried chickens before they were hatched.) However, a **franchise agreement** may provide for refunds to the franchisee if certain conditions are not met, and franchise fee profit can be reduced sharply by future costs of obligations and services to be rendered by the franchisor.

Franchise Accounting

As indicated, the performance obligations in a franchise arrangement relate to the right to open a business, use of the trade name or other intellectual property of the franchisor, and continuing services, such as marketing help, training, and in some cases supplying inventory and inventory management. Franchisors commonly charge an initial franchise fee as well as continuing franchise fees.

- The **initial franchise fee** is payment for establishing the franchise relationship and providing some initial services.
- **Continuing franchise fees** are received in return for the continuing rights granted by the franchise agreement and for providing such services as management training, advertising and promotion, legal assistance, and other support.

Example 17B.1
Franchise

FACTS Tum's Pizza Inc. enters into a franchise agreement on December 31, 2025, giving Food Fight Corp. the right to operate as a franchisee of Tum's Pizza for 5 years. Tum's charges Food Fight an initial franchise fee of $50,000 for the right to operate as a franchisee. Of this amount, $20,000 is payable when Food Fight signs the agreement, and the note balance is payable in five annual payments of $6,000 each on December 31. As part of the arrangement, Tum's helps locate the site, negotiate the lease or purchase of the site, supervise the construction activity, and provide employee training and the equipment necessary to be a distributor of its products. Similar training services and equipment are sold separately.

Food Fight also promises to pay ongoing royalty payments of 1% of its annual sales (payable each January 31 of the following year) and is obliged to purchase products from Tum's at its current standalone selling prices at the time of purchase. The credit rating of Food Fight indicates that money can be borrowed at 8%. The present value of an ordinary annuity of five annual receipts of $6,000 each discounted at 8% is $23,957. The discount of $6,043 represents the interest revenue to be accrued by Tum's over the payment period.

QUESTION What are the performance obligations in this arrangement and the point in time at which the performance obligations for Tum's are satisfied and revenue is recognized?

SOLUTION

To identify the performance obligations, Tum's must determine whether the promised rights, site selection and construction services, training services, and equipment are distinct.

- Rights to the trade name, market area, and proprietary know-how for 5 years are not individually distinct because each one is not sold separately and cannot be used with other goods or services that are readily available to the franchisee. Therefore, those combined rights give rise to a single performance obligation. Tum's satisfies the performance obligation to grant those rights at the point in time when Food Fight obtains control of the rights. That is, once Food Fight begins operating the store, Tum's has no further obligation with respect to these rights.
- Training services and equipment are distinct because similar services and equipment are sold separately. Tum's satisfies these performance obligations when it transfers the services and equipment to Food Fight.
- Tum's cannot recognize revenue for the royalty payments because it is not reasonably assured to be entitled to these sales-based royalty amounts. That is, these payments represent variable consideration. Therefore, Tum's recognizes revenue for the royalties when (or as) the uncertainty is resolved.

Tum's promise to stand ready to provide products to the franchisee in the future at standalone selling prices is not accounted for as a separate performance obligation in the contract because it does not provide Food Fight with a material right. Thus, revenue from those sales is recorded in the future when the sales are made.

To illustrate the accounting for the franchise in Example 17B.1, consider the following values for allocation of the transaction price at December 31, 2025.

Rights to the trade name, market area, and proprietary know-how	$20,000
Training services	9,957
Equipment (cost of $10,000)	14,000
Total transaction price	$43,957

Training is completed in January 2026, the equipment is installed in January 2026, and Food Fight holds a grand opening on February 2, 2026. The entries for the Tum's franchise arrangement are summarized in **Illustration 17B.1**.

ILLUSTRATION 17B.1 Franchise Entries—Inception and Commencement of Operations

Tum's signs the agreement and receives upfront payment and note on December 31, 2025:

Cash	20,000	
Notes Receivable ($50,000 − $20,000)	30,000	
Discount on Notes Receivable		6,043
Unearned Franchise Revenue		20,000
Unearned Service Revenue (training)		9,957
Unearned Sales Revenue (equipment)		14,000

Franchise opens; Tum's satisfies the performance obligations related to the franchise rights, training, and equipment (that is, Tum's has no further obligations related to these elements of the franchise) on February 2, 2026:

Unearned Franchise Revenue	20,000	
Franchise Revenue		20,000
Unearned Service Revenue (training)	9,957	
Service Revenue (training)		9,957
Unearned Sales Revenue (equipment)	14,000	
Sales Revenue		14,000
Cost or Goods Sold	10,000	
Inventory		10,000

As indicated, when Food Fight begins operations, Tum's satisfies the performance obligations related to the franchise rights, training, and equipment under the franchise agreement. That is, Tum's has no further obligations related to these elements of the franchise.

During 2026, Food Fight does well, recording $525,000 of sales in its first year of operations. The entries for Tum's related to the first year of operations of the franchise are summarized in **Illustration 17B.2**.

ILLUSTRATION 17B.2 Franchise Entries—First Year of Franchise Operations

To record continuing franchise feecs on December 31, 2026:

Accounts Receivable ($525,000 × .01)	5,250	
Franchise Revenue		5,250

To record payment received and interest revenue on note on December 31, 2026:

Cash	6,000	
Notes Receivable		6,000
Discount on Notes Receivable ($23,957 × .08)	1,917	
Interest Revenue		1,917

Tum's will make similar entries in subsequent years of the franchise agreement.

Recognition of Franchise Rights Revenue over Time

In Example 17B.1, Tum's transferred control of the franchise rights at a point in time—that is, when the franchisee began operations and could benefit from control of the rights—with no further involvement by Tum's. In other situations, depending on the economic substance

of the rights, the franchisor may be providing **access to the right** rather than transferring control of the franchise rights. In this case, **the franchise revenue is recognized over time**, rather than at a point in time.

Example 17B.2 Franchise Revenue over Time

FACTS Tech Solvers Corp. is a franchisor in the emerging technology consulting service business. Tech Solvers' stores provide a range of computing services (hardware/software installation, repairs, data backup, device syncing, and network solutions) on popular Apple and PC devices. Each franchise agreement gives a franchisee the right to open a Tech Solvers store and sell Tech Solvers' products and services in the area for 5 years.

Under the contract, Tech Solvers also provides the franchisee with a number of services to support and enhance the franchise brand, including (a) advising and consulting on the operations of the store; (b) communicating new hardware and software developments, and service techniques; (c) providing business and training manuals; and (d) advertising programs and training. As an almost entirely service operation (all parts and other supplies are purchased as needed by customers), Tech Solvers provides few upfront services to franchisees. Instead, the franchisee recruits service technicians, who are given Tech Solvers' training materials (online manuals and tutorials), which are updated for technology changes, on a monthly basis at a minimum.

Tech Solvers enters into a franchise agreement on December 15, 2025, giving a franchisee the rights to operate a Tech Solvers franchise in eastern Indiana for 5 years. Tech Solvers charges an initial franchise fee of $5,000 for the right to operate as a franchisee, payable upon signing the contract. Tech Solvers also receives ongoing royalty payments of 7% of the franchisee's annual sales (payable each January 15 of the following year). The franchise began operations in January 2026 and recognized $85,000 of revenue in 2026.

QUESTION What are the performance obligations in this arrangement and the point in time at which the performance obligations will be satisfied and revenue will be recognized?

SOLUTION

To identify the performance obligations, Tech Solvers must determine whether the promised rights and the ongoing franchisee technology support and training services are distinct.

- Rights to the trade name, market area, and proprietary know-how for 5 years are not individually distinct because each one is not sold separately and cannot be used with other goods or services that are readily available to the franchisee. In addition, these licensed rights have a close connection with the underlying Tech Solvers' intellectual property (its ability to keep its service and training materials up-to-date). Therefore, those combined rights and the ongoing training materials are a single performance obligation. Tech Solvers satisfies the performance obligation over time. That is, once the franchisee begins operating a Tech Solvers franchise, Tech Solvers is providing access to the rights and must continue to perform updates and services.
- Tech Solvers cannot recognize revenue for the royalty payments because it is not reasonably assured to be entitled to those revenue-based royalty amounts. That is, these payments represent variable consideration. Therefore, Tech Solvers recognizes revenue for the royalties when (or as) the uncertainty is resolved.

The entries for Tech Solvers related to the franchise are summarized in Illustration 17B.3.

ILLUSTRATION 17B.3 Franchise Entries—Revenue Recognized over Time

Franchise agreement signed and receipt of upfront payment and note on December 15, 2025:

Cash	5,000	
Unearned Franchise Revenue		5,000

Franchise begins operations in January 2026 and records $85,000 of revenue for the year ended December 31, 2026, on December 31, 2026:

Unearned Franchise Revenue	1,000	
Franchise Revenue ($5,000 ÷ 5)		1,000
Accounts Receivable	5,950	
Franchise Revenue ($85,000 × .07)		5,950

To record payment received from franchisee on January 15, 2027:

Cash	5,950	
Accounts Receivable		5,950

As indicated, Tech Solvers satisfies the performance obligation related to the franchise rights and training materials over time (in this case, on a straight-line basis). Continuing franchise fees are recognized when uncertainty related to the variable consideration is resolved.

In summary, analysis of the characteristics of the Tech Solvers franchise indicates that it does not represent a right that is transferred at a point in time. That is, Tech Solvers has a continuing obligation to provide updated materials and ongoing support, suggesting the control of the right has not been transferred to the franchisee. Thus, revenue from the franchise rights is recognized over time.

Review and Practice

Key Terms Review

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Learning Objectives Review

1 Discuss the fundamental concepts related to revenue recognition and measurement.

Most revenue transactions pose few problems for revenue recognition. This is because, in many cases, the transaction is initiated and completed at the same time. Increasing complexity of business and revenue arrangements have resulted in revenue recognition practices being identified as the most prevalent reasons for accounting restatements. A number of the revenue recognition issues relate to possible fraudulent behavior by company executives and employees, but are also due to sometimes incomplete and inconsistent accounting guidelines for revenue recognition. The FASB has issued guidance for determining when revenue should be reported and how it should be measured. The standard is comprehensive and applies to all companies. As a result, comparability and consistency in reporting revenue should be enhanced.

The five steps in the revenue recognition process are (1) identify the contract with customers, (2) identify the separate performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the separate performance obligations, and (5) recognize revenue when each performance obligation is satisfied.

2 Explain and apply the five-step revenue recognition process.

1. **Identify the contract with customers.** A contract is an agreement that creates enforceable rights or obligations. A company applies the revenue guidance to contracts with customers.
2. **Identify the separate performance obligations in the contract.** A performance obligation is a promise in a contract to provide a product or service to a customer. A contract may be comprised of multiple performance obligations. The accounting for multiple performance obligations is based on evaluation of whether the product or service is distinct within the contract. If each of the goods or services is distinct, but is interdependent and interrelated, these goods and services are combined and reported as one performance obligation.
3. **Determine the transaction price.** The transaction price is the amount of consideration that a company expects to receive from a customer in exchange for transferring goods and services. In determining the transaction price, companies must consider the following factors: (1) variable consideration, (2) time value of money, (3) noncash consideration, and (4) consideration paid or payable to a customer.

4. **Allocate the transaction price to the separate performance obligations.** If more than one performance obligation exists in a contract, allocate the transaction price based on relative standalone selling prices. Estimates of standalone selling price can be based on (1) adjusted market assessment, (2) expected cost plus a margin approach, or (3) a residual approach.
5. **Recognize revenue when the company satisfies its performance obligation.** A company satisfies its performance obligation when the customer obtains control of the good or service. Companies satisfy performance obligations either at a point in time or over a period of time. Companies recognize revenue over a period of time if one of the following criteria is met: (1) the customer receives and consumes the benefits as the seller performs, (2) the customer controls the asset as it is created, or (3) the company does not have an alternative use for the asset.

3 Apply the five-step process to major revenue recognition issues.

Refer to Illustration 17.10 for a summary of the accounting for (a) sales returns and allowances, (b) repurchase agreements, (c) bill-and-hold sales, (d) principal-agent relationships, (e) consignments, (f) warranties, and (g) nonrefundable upfront fees.

4 Describe presentation and disclosure regarding revenue.

Under the asset-liability approach to recognize revenue, companies present contract assets and contract liabilities on their balance sheets. Contract assets are rights to receive consideration. A contract liability is a company's obligation to transfer goods or services to a customer for which the company has received consideration from the customer. Companies must determine if new performance obligations are created by a contract modification and may also report assets associated with fulfillment costs and contract acquisition costs related to a revenue arrangement.

Companies disclose qualitative and quantitative information about (a) contracts with customers with disaggregation of revenue, presentation of opening and closing balances in contract assets and contract liabilities, and significant information related to their performance obligations; (b) significant judgments that affect the determination of the transaction price, the allocation of the transaction price, and the determination of the timing of revenue; and (c) assets recognized from costs incurred to fulfill a contract.

*5 Apply the percentage-of-completion method for long-term contracts.

To apply the percentage-of-completion method to long-term contracts, a company must have some basis for measuring the progress toward completion at particular interim dates. One of the most popular input measures used to determine the progress toward completion is the cost-to-cost basis. Using this basis, a company measures the percentage of completion by comparing costs incurred to date with the most recent estimate of the total costs to complete the contract. The company applies that percentage to the total revenue or the estimated total gross profit on the contract to arrive at the amount of revenue or gross profit to be recognized to date.

*6 Apply the cost-recovery method for long-term contracts.

Under the cost-recovery method, companies recognize gross profit only at the point of sale, that is, when the company completes the contract. The company accumulates costs of long-term contracts in process and current billings. This method (sometimes referred to as the zero-profit method) recognizes revenue only to the extent of costs incurred that are expected to be recoverable. Profit is recognized only after all costs are incurred.

*7 Identify the proper accounting for losses on long-term contracts.

Two types of losses can become evident under long-term contracts. (1) **Loss in current period on a profitable contract:** Under the percentage-of-completion method only, the estimated cost increase requires a current-period adjustment of excess gross profit recognized on the project in prior periods. The company records this adjustment as a loss in the current period because it is a change in accounting estimate. (2) **Loss on an unprofitable contract:** Under both the percentage-of-completion and the cost-recovery methods, the company must recognize the entire expected contract loss in the current period.

*8 Explain revenue recognition for franchises.

In a franchise arrangement, the franchisor satisfies its performance obligation for a franchise license when control of the franchise rights is transferred, generally when the franchisee begins operations of the franchise. In situations where the franchisor provides **access to the rights** rather than transferring control of the franchise rights, the franchise rights' revenue is recognized over time rather than at a point in time. Franchisors recognize continuing franchise fees over time (as uncertainty related to the variable consideration is resolved).

Enhanced Review and Practice

Go to Wiley Course Resources for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Exercises, Problems, Data Analytics Activities, Problem Solution Walkthrough Videos, and many more assessment tools and resources are available for practice in Wiley Course Resources.

Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. Explain the current environment regarding revenue recognition.

2. What was viewed as a major criticism of GAAP as it relates to revenue recognition?

3. Describe the revenue recognition principle.

4. Identify the five steps in the revenue recognition process.

5. Describe the critical factor in evaluating whether a performance obligation is satisfied.

6. When is revenue recognized in the following situations? (a) Revenue from selling products, (b) revenue from services performed, (c) revenue from permitting others to use company assets, and (d) revenue from disposing of assets other than products.

7. Explain the importance of a contract in the revenue recognition process.

8. On October 10, 2025, Executor Co. entered into a contract with Belisle Inc. to transfer Executor's specialty products (sales value of $10,000, cost of $6,500) on December 15, 2025. Belisle agrees to make a payment of $5,000 upon delivery and signs a promissory note to pay the remaining balance on January 15, 2026. What entries does Executor make in 2025 on this contract? Ignore time value of money considerations.

9. What is a performance obligation? Under what conditions does a performance obligation exist?

10. When must multiple performance obligations in a revenue arrangement be accounted for separately?

11. Engelhart Implements Inc. sells tractors to area farmers. The price for each tractor includes GPS positioning service for 9 months (which facilitates field settings for planting and harvesting equipment). The GPS service is regularly sold on a standalone basis by Engelhart for a monthly fee. After the 9-month period, the consumer can renew the service on a fee basis. Does Engelhart have one or multiple performance obligations? Explain.

12. What is the transaction price? What additional factors related to the transaction price must be considered in determining the transaction price?

13. What are some examples of variable consideration? What are the two approaches for estimating variable consideration?

14. Allee Corp. is evaluating a revenue arrangement to determine proper revenue recognition. The contract is for construction of 10 speedboats for a contract price of $400,000. The customer needs the boats in its showrooms by February 1, 2026, for the boat purchase season; the customer provides a bonus payment of $21,000 if all boats are delivered by the February 1 deadline. The bonus is reduced by $7,000 each week that the boats are delivered after the deadline until no bonus is paid if the boats are delivered after February 15, 2026. Allee frequently includes such bonus terms in its contracts and thus has good historical data for estimating the probabilities of completion at different dates. It estimates an equal probability (25%) for each full delivery outcome. What approach should Allee use to determine the transaction price for this contract? Explain.

15. Refer to the information in Question 14. Assume that Allee has limited experience with a construction project on the same scale as the 10 speedboats. How does this affect the accounting for the variable consideration?

16. In measuring the transaction price, explain the accounting for (a) time value of money, and (b) noncash consideration.

17. What is the proper accounting for volume discounts on sales of products?

18. On what basis should the transaction price be allocated to various performance obligations? Identify the approaches for allocating the transaction price.

19. Fuhremann Co. is a full-service manufacturer of surveillance equipment. Customers can purchase any combination of equipment, installation services, and training as part of Fuhremann's security services. Thus, each of these performance obligations are separate with individual standalone selling prices. Laplante Inc. purchased cameras, installation, and training at a total price of $80,000. Estimated standalone selling prices of the equipment, installation, and training are $90,000, $7,000, and $3,000, respectively. How should the transaction price be allocated to the equipment, installation, and training?

20. When does a company satisfy a performance obligation? Identify the indicators of satisfaction of a performance obligation.

21. Under what conditions does a company recognize revenue over a period of time?

22. How do companies recognize revenue from a performance obligation over time?

23. Explain the accounting for sales with right of return.

24. What are the reporting issues in a sale with a repurchase agreement?

25. Explain a bill-and-hold sale. When is revenue recognized in these situations?

26. Explain a principal-agent relationship and its significance to revenue recognition.

27. What is the nature of a sale on consignment?

28. What are the two types of warranties? Explain the accounting for each type.

29. Campus Cellular provides cell phones and 1 year of cell service to students for an upfront, nonrefundable fee of $300 and a usage fee of $5 per month. Students may renew the service without paying another upfront fee for each year they are on campus (on average, students renew their service one time). What amount of revenue should Campus Cellular recognize in the first year of the contract?

30. Describe the conditions when contract assets and liabilities are recognized and presented in financial statements.

31. Explain the accounting for contract modifications.

32. Explain the reporting for costs to fulfill a contract.

33. What qualitative and quantitative disclosures are required related to revenue recognition?

*34. What are the two basic methods of accounting for long-term construction contracts? Indicate the circumstances that determine when one or the other of these methods should be used.

*35. For what reasons should the percentage-of-completion method be used over the cost-recovery method whenever possible?

*36. What methods are used in practice to determine the extent of progress toward completion? Identify some "input measures" and some "output measures" that might be used to determine the extent of progress.

*37. What are the two types of losses that can become evident in accounting for long-term contracts? What is the nature of each type of loss? How is each type accounted for?

*38. Why in franchise arrangements may it be improper to recognize the entire franchise fee as revenue at the date of sale?

*39. How should a franchisor account for continuing franchise fees and routine sales of equipment and supplies to franchisees?

Brief Exercises

BE17.1 (LO 1) Leno Computers manufactures tablet computers for sale to retailers such as Fallon Electronics. Recently, Leno sold and delivered 200 tablet computers to Fallon for $20,000 on January 5, 2025. Fallon has agreed to pay for the 200 tablet computers within 30 days. Fallon has a good credit rating and should have no difficulty in making payment to Leno. (a) Explain whether a valid contract exists between Leno Computers and Fallon Electronics. (b) Assuming that Leno Computers has not yet delivered the tablet computers to Fallon Electronics, what might cause a valid contract not to exist between Leno and Fallon?

BE17.2 (LO 1) On May 10, 2025, Cosmo Co. enters into a contract to deliver a product to Greig Inc. on June 15, 2025. Greig agrees to pay the full contract price of $2,000 on July 15, 2025. The cost of the goods is $1,300. Cosmo delivers the product to Greig on June 15, 2025, and receives payment on July 15, 2025. Prepare the journal entries for Cosmo related to this contract. Either party may terminate the contract without compensation until one of the parties performs.

BE17.3 (LO 2) Hillside Company enters into a contract with Sanchez Inc. to provide a software license and 3 years of customer support. The customer-support services require specialized knowledge that only Hillside Company's employees can perform. How many performance obligations are in the contract?

BE17.4 (LO 2) Destin Company signs a contract to manufacture a new 3D printer for $80,000. The contract includes installation which costs $4,000 and a maintenance agreement over the life of the printer at a cost of $10,000. The printer cannot be operated without the installation. Destin Company as well as other companies could provide the installation and maintenance agreement. What are Destin Company's performance obligations in this contract?

BE17.5 (LO 2) Ismail Construction enters into a contract to design and build a hospital. Ismail is responsible for the overall management of the project and identifies various goods and services to be provided, including engineering, site clearance, foundation, procurement, construction of the structure, piping and wiring, installation of equipment, and finishing. Does Ismail have a single performance obligation to the customer in this revenue arrangement? Explain.

BE17.6 (LO 2) Nair Corp. enters into a contract with a customer to build an apartment building for $1,000,000. The customer hopes to rent apartments at the beginning of the school year and provides a performance bonus of $150,000 to be paid if the building is ready for rental beginning August 1, 2026. The bonus is reduced by $50,000 each week that completion is delayed. Nair commonly includes these completion bonuses in its contracts and, based on prior experience, estimates the following completion outcomes:

Completed by	Probability
August 1, 2026	70%
August 8, 2026	20
August 15, 2026	5
After August 15, 2026	5

Determine the transaction price for this contract.

BE17.7 (LO 2) Referring to the revenue arrangement in BE17.6, determine the transaction price for the contract, assuming (a) Nair is only able to estimate whether the building can be completed by August 1, 2026, or not (Nair estimates that there is a 70% chance that the building will be completed by August 1, 2026), and (b) Nair has limited information with which to develop a reliable estimate of completion by the August 1, 2026, deadline.

BE17.8 (LO 2) Presented below are three revenue recognition situations.

a. Groupo sells goods to MTN for $1,000,000, payment due at delivery.

b. Groupo sells goods on account to Grifols for $800,000, payment due in 30 days.

c. Groupo sells goods to Magnus for $500,000, payment due in two installments, the first installment payable in 18 months and the second payment due 6 months later. The present value of the future payments is $464,000.

Indicate the transaction price for each of these situations and when revenue will be recognized.

BE17.9 (LO 2) On January 2, 2025, Adani Inc. sells goods to Geo Company in exchange for a zero-interest-bearing note with face value of $11,000, with payment due in 12 months. The fair value of the goods at the date of sale is $10,000 (cost $6,000). Prepare the journal entry to record this transaction on January 2, 2025. How much total revenue should be recognized in 2025?

BE17.10 (LO 2) On March 1, 2025, Parnevik Company sold goods to Goosen Inc. for $660,000 in exchange for a 5-year, zero-interest-bearing note in the face amount of $1,062,937 (an inputed rate of 10%). The goods have an inventory cost on Parnevik's books of $400,000. Prepare the journal entries for Parnevik on (a) March 1, 2025, and (b) December 31, 2025.

BE17.11 (LO 2, 3) Larkspur Inc. sells prepaid telephone cards to customers in its convenience stores. When Larkspur sells cards, it then pays the telecommunications company, TeleExpress, for the value of the cards less a 20% commission. Assume that Larkspur receives $4,000 of prepaid cards in January 2025. Larkspur sold 50% of the cards in February, 30% in March, and 20% in April. The total payment by Larkspur to TeleExpress over the 3 months is $3,200. Indicate how much income Larkspur should recognize in January, February, March, and April.

BE17.12 (LO 2, 3) Manual Company sells goods to Nolan Company during 2025. It offers Nolan the following rebates based on total sales to Nolan. If total sales to Nolan are 10,000 units, it will grant a rebate of 2%. If it sells up to 20,000 units, it will grant a rebate of 4%. If it sells up to 30,000 units, it will grant a rebate of 6%. In the first quarter of the year, Manual sells 11,000 units to Nolan at a sales price of $110,000. Manual, based on past experience, has sold over 40,000 units to Nolan, and these sales normally take place in the third quarter of the year. What amount of revenue should Manual report for the sale of the 11,000 units in the first quarter of the year?

BE17.13 (LO 3) On July 10, 2025, Amodt Music sold CDs to retailers on account and recorded sales revenue of $700,000 (cost $560,000). Amodt grants the right to return CDs that do not sell in 3 months following delivery. Past experience indicates that the normal return rate is 15%. By October 11, 2025, retailers returned CDs to Amodt and were granted credit of $78,000. Prepare Amodt's journal entries to record (a) the sale on July 10, 2025, and (b) $78,000 of returns on October 11, 2025, and on October 31, 2025. Assume that Amodt prepares financial statements on October 31, 2025.

BE17.14 (LO 3) Kristin Company sells 300 units of its products for $20 each to Logan Inc. for cash. Kristin allows Logan to return any unused product within 30 days and receive a full refund. The cost of each product is $12. To determine the transaction price, Kristin decides that the approach that is most predictive of the amount of consideration to which it will be entitled is the probability-weighted amount. Using the probability-weighted amount, Kristin estimates that (1) 10 products will be returned and (2) the returned products are expected to be resold at a profit. Indicate the amount of (a) net sales, (b) estimated liability for refunds, and (c) cost of goods sold that Kristen should report in its financial statements (assume that none of the products have been returned at the financial statement date).

BE17.15 (LO 3) On June 1, 2025, Mills Company sells $200,000 of shelving units to a local retailer, ShopBarb, which is planning to expand its stores in the area. Under the agreement, ShopBarb asks Mills to retain the shelving units at its factory until the new stores are ready for installation. Title passes to ShopBarb at the time the agreement is signed. The shelving units are delivered to the stores on September 1, 2025, and ShopBarb pays in full. Prepare the journal entries for this bill-and-hold arrangement (assuming that conditions for recognizing the sale as a bill-and-hold sale have been met) for Mills on June 1 and September 1, 2025. The cost of the shelving units to Mills is $110,000.

BE17.16 (LO 3) Travel Inc. sells tickets for a Caribbean cruise on ShipAway Cruise Lines to Carmel Company employees. The total cruise package price to Carmel Company employees is $70,000. Travel Inc. receives a commission of 6% of the total price. Travel Inc. therefore remits $65,800 to ShipAway. Prepare the journal entry to record (1) the receipt of payment of $70,000 from employees for the cruise packages and (2) the remittance and revenue recognized by Travel Inc. on this transaction.

BE17.17 (LO 3) Jansen Corporation shipped $20,000 of merchandise on consignment to Gooch Company. Jansen paid freight costs of $2,000. Gooch Company paid $500 for local advertising, which is reimbursable from Jansen. By year-end, 60% of the merchandise had been sold for $21,500. Gooch notified Jansen, retained a 10% commission, and remitted the cash due to Jansen. Prepare Jansen's journal entry when the cash is received.

BE17.18 (LO 3) Talarczyk Company sold 10,000 Super-Spreaders on December 31, 2025, at a total price of $1,000,000, with a warranty guarantee that the product was free of any defects. The cost of the spreaders sold is $550,000. The assurance warranties extend for a 2-year period and are estimated to cost $40,000. Talarczyk also sold extended warranties (service-type warranties) related to 2,000 spreaders for 2 years beyond the 2-year period for $12,000. Given this information, determine the amounts to report

for the following at December 31, 2025: sales revenue, warranty expense, unearned warranty revenue, warranty liability, and cash.

BE17.19 (LO 3) On May 1, 2025, Mount Company enters into a contract to transfer a product to Eric Company on September 30, 2025. It is agreed that Eric will pay the full price of $25,000 in advance on June 15, 2025. Eric pays on June 15, 2025, and Mount delivers the product on September 30, 2025. Prepare the journal entries required for Mount in 2025.

BE17.20 (LO 3) Nate Beggs signs a 1-year contract with BlueBox Video. The terms of the contract are that Nate is required to pay a nonrefundable initiation fee of $100. No annual membership fee is charged in the first year. After the first year, membership can be renewed by paying an annual membership fee of $5 per month. BlueBox determines that its customers, on average, renew their annual membership three times after the first year before terminating their membership. What amount of revenue should BlueBox recognize in its first year?

BE17.21 (LO 4) Stengel Co. enters into a 3-year contract to perform maintenance service for Laplante Inc. Laplante promises to pay $100,000 at the beginning of each year (the standalone selling price of the service at contract inception is $100,000 per year). At the end of the second year, the contract is modified and the fee for the third year of service, which reflects a reduced menu of maintenance services to be performed at Laplante locations, is reduced to $80,000 (the standalone selling price of the services at the beginning of the third year is $80,000 per year). Briefly describe the accounting for this contract modification.

*__BE17.22 (LO 5)__ Turner, Inc. began work on a $7,000,000 contract in 2025 to construct an office building. During 2025, Turner, Inc. incurred costs of $1,700,000, billed its customers for $1,200,000, and collected $960,000. At December 31, 2025, the estimated additional costs to complete the project total $3,300,000. Prepare Turner's 2025 journal entries using the percentage-of-completion method.

*__BE17.23 (LO 6)__ Guillen, Inc. began work on a $7,000,000 contract in 2025 to construct an office building. Guillen uses the cost-recovery method. At December 31, 2025, the balances in certain accounts were Construction in Process $1,715,000, Accounts Receivable $240,000, and Billings on Construction in Process $1,000,000. Indicate how these accounts would be reported in Guillen's December 31, 2025, balance sheet.

*__BE17.24 (LO 7)__ Archer Construction Company began work on a $420,000 construction contract in 2025. During 2025, Archer incurred costs of $278,000, billed its customer for $215,000, and collected $175,000. At December 31, 2025, the estimated additional costs to complete the project total $162,000. Prepare Archer's journal entry to record profit or loss, if any, using (a) the percentage-of-completion method and (b) the cost-recovery method.

*__BE17.25 (LO 8)__ Frozen Delight, Inc. charges an initial franchise fee of $75,000 for the right to operate as a franchisee of Frozen Delight. Of this amount, $25,000 is collected immediately. The remainder is collected in four equal annual installments of $12,500 each. These installments have a present value of $41,402. As part of the total franchise fee, Frozen Delight also provides training (with a fair value of $2,000) to help franchisees get the store ready to open. The franchise agreement is signed on April 1, 2025, training is completed, and the store opens on July 1, 2025. Prepare the journal entries required by Frozen Delight on April 1 and July 1, 2025.

Exercises

E17.1 (LO 1) (Fundamentals of Revenue Recognition) Presented below are five different situations. Provide an answer to each of these questions.

1. The Kawaski Jeep dealership sells both new and used Jeeps. Some of the Jeeps are used for demonstration purposes; after 6 months, these Jeeps are then sold as used vehicles. Should Kawaski Jeep record these sales of used Jeeps as revenue or as a gain?
2. One of the main indicators of whether control has passed to the customer is whether revenue has been earned. Is this statement correct?
3. One of the five steps in determining whether revenue should be recognized is whether the sale has been realized. Do you agree?
4. One of the criteria that contracts must meet to apply the revenue standard is that collectibility of the sales price must be reasonably possible. Is this correct?
5. Many believe the distinction between revenue and gains is important in the financial statements. Given that both revenues and gains increase net income, why is the distinction important?

E17.2 (LO 1) (Fundamentals of Revenue Recognition) Respond to the questions related to the following statements.

1. A wholly unperformed contract is one in which the company has neither transferred the promised goods or services to the customer nor received, or become entitled to receive, any consideration. Why are these contracts not recorded in the accounts?
2. Performance obligations are the unit of account for purposes of applying the revenue recognition standard and therefore determine when and how revenue is recognized. Is this statement correct?
3. Elaina Company contracts with a customer and provides the customer with an option to purchase additional goods for free or at a discount. Should Elaina Company account for this option?
4. The transaction price is generally not adjusted to reflect the customer's credit risk, meaning the risk that the customer will not pay the amount to which the entity is entitled to under the contract. Comment on this statement.

E17.3 (LO 1, 2) (Existence of a Contract) On May 1, 2025, Richardson Inc. entered into a contract to deliver one of its specialty mowers to Kickapoo Landscaping Co. The contract requires Kickapoo to pay the contract price of $900 in advance on May 15, 2025. Kickapoo pays Richardson on May 15, 2025, and Richardson delivers the mower (with cost of $575) on May 31, 2025.

Instructions

a. Prepare the journal entry on May 1, 2025, for Richardson.

b. Prepare the journal entry on May 15, 2025, for Richardson.

c. Prepare the journal entry on May 31, 2025, for Richardson.

E17.4 (LO 2) (Determine Transaction Price) Jupiter Company sells goods to Danone Inc. by accepting a note receivable on January 2, 2025. The goods have a sales price of $610,000 (cost of $500,000). The terms are net 30. If Danone pays within 5 days, however, it receives a cash discount of $10,000. Past history indicates that the cash discount will be taken. On January 28, 2025, Danone makes payment to Jupiter for the full sales price.

Instructions

a. Prepare the journal entry(ies) to record the sale and related cost of goods sold for Jupiter Company on January 2, 2025, and the payment on January 28, 2025. Assume that Jupiter Company records the January 2, 2025, transaction using the net method.

b. Prepare the journal entry(ies) to record the sale and related cost of goods sold for Jupiter Company on January 2, 2025, and the payment on January 28, 2025. Assume that Jupiter Company records the January 2, 2025, transaction using the gross method.

E17.5 (LO 2) (Determine Transaction Price) Jeff Heun, president of Concrete Always, agrees to construct a concrete cart path at Dakota Golf Club. Concrete Always enters into a contract with Dakota to construct the path for $200,000. In addition, as part of the contract, a performance bonus of $40,000 will be paid based on the timing of completion. The performance bonus will be paid fully if completed by the agreed-upon date. The performance bonus decreases by $10,000 per week for every week beyond the agreed-upon completion date. Jeff has been involved in a number of contracts that had performance bonuses as part of the agreement in the past. As a result, he is fairly confident that he will receive a good portion of the performance bonus. Jeff estimates, given the constraints of his schedule related to other jobs, that there is 55% probability that he will complete the project on time, a 30% probability that he will be 1 week late, and a 15% probability that he will be 2 weeks late.

Instructions

a. Determine the transaction price that Concrete Always should compute for this agreement.

b. Assume that Jeff Heun has reviewed his work schedule and decided that it makes sense to complete this project on time. Assuming that he now believes that the probability for completing the project on time is 90% and otherwise it will be finished 1 week late, determine the transaction price.

E17.6 (LO 2) (Determine Transaction Price) Bill Amends, owner of Real Estate Inc., buys and sells commercial properties. Recently, he sold land for $3,000,000 to the Blackhawk Group, a developer that plans to build a new shopping mall. In addition to the $3,000,000 sales price, Blackhawk Group agrees to pay Real Estate Inc. 1% of the retail sales of the mall for 10 years. Blackhawk estimates that retail sales in a typical mall project is $1,000,000 a year. Given the substantial increase in online sales that are occurring in the retail market, Bill had originally indicated that he would prefer a higher price for the land instead of the 1% future-sales-based arrangement and suggested a price of $3,250,000. However, Blackhawk would not agree to those terms.

Instructions

What is the transaction price for the land and related royalty payment that Real Estate Inc. should record?

E17.7 (LO 2) (Determine Transaction Price) Blair Biotech enters into a licensing agreement with Pang Pharmaceutical for a drug under development. Blair will receive a payment of $10,000,000 if the drug receives regulatory approval. Based on prior experience in the drug-approval process, Blair determines it is 90% likely that the drug will gain approval and a 10% chance of denial.

Instructions

a. Determine the transaction price of the arrangement for Blair Biotech.

b. Assuming that regulatory approval was granted on December 20, 2025, and that Blair received the payment from Pang on January 15, 2026, prepare the journal entries for Blair. The license meets the criteria for point-in-time revenue recognition.

E17.8 (LO 2, 3) (Determine Transaction Price) Aaron's Agency sells an insurance policy offered by Capital Insurance Company for a commission of $100 on January 2, 2025. In addition, Aaron will receive an additional commission of $10 each year for as long as the policyholder does not cancel the policy. Based on Aaron's significant experience with these types of policies, it estimates that policyholders on average renew the policy for 4.5 years, which results in an expected policy life of 5.5 years. It has no evidence to suggest that previous policyholder behavior will change.

Instructions

a. Determine the transaction price of the arrangement for Aaron, assuming 100 policies are sold.

b. Determine the revenue that Aaron will recognize in 2025.

E17.9 (LO 2, 3) (Determine Transaction Price) Taylor Marina has 300 available slips that rent for $800 per season. Payments must be made in full by the start of the boating season, April 1, 2026. The boating season ends October 31, and the marina has a December 31 year-end. Slips for future seasons may be reserved if paid for by December 31, 2026. Under a new policy, if payment for 2027 season slips is made by December 31, 2026, a 5% discount is allowed. If payment for 2028 season slips is made by December 31, 2026, renters get a 20% discount (this promotion hopefully will provide cash flow for major dock repairs).

On December 31, 2025, all 300 slips for the 2026 season were rented at full price. On December 31, 2026, 200 slips were reserved and paid for the 2027 boating season, and 60 slips were reserved and paid for the 2028 boating season.

Instructions

a. Prepare the appropriate journal entries for December 31, 2025, and December 31, 2026.

b. Assume the marina operator is unsophisticated in business. Explain the managerial significance of the above accounting to this person.

E17.10 (LO 2) (Allocate Transaction Price) Geraths Windows manufactures and sells custom storm windows for three-season porches. Geraths also provides installation service for the windows. The installation process does not involve changes in the windows, so this service can be performed by other vendors. Geraths enters into the following contract on July 1, 2025, with a local homeowner. The customer purchases windows for a price of $2,400 and chooses Geraths to do the installation. Geraths charges the same price for the windows irrespective of whether it does the installation or not. The installation service is estimated to have a standalone selling price of $600. The customer pays Geraths $2,000 (which equals the standalone selling price of the windows, which have a cost of $1,100) upon delivery and the remaining balance upon installation of the windows. The windows are delivered on September 1, 2025, Geraths completes installation on October 15, 2025, and the customer pays the balance due. Prepare the journal entries for Geraths in 2025. (Round amounts to nearest dollar.)

E17.11 (LO 2) (Allocate Transaction Price) Refer to the revenue arrangement in E17.10. Repeat the requirements, assuming (a) Geraths estimates the standalone selling price of the installation based on an estimated cost of $400 plus a margin of 20% on cost, and (b) given uncertainty of finding skilled labor, Geraths is unable to develop a reliable estimate for the standalone selling price of the installation. (Round amounts to nearest dollar.)

E17.12 (LO 2) (Allocate Transaction Price) Shaw Company sells goods on credit that cost $300,000 to Ricard Company for $410,000 on January 2, 2025. The sales price includes an installation fee, which has a standalone selling price of $40,000. The standalone selling price of the goods is $370,000. The installation is considered a separate performance obligation and is expected to take 6 months to complete.

Instructions

a. Prepare the journal entries (if any) to record the sale on January 2, 2025.

b. Shaw prepares an income statement for the first quarter of 2025, ending on March 31, 2025 (installation was completed on June 18, 2025). How much revenue should Shaw recognize related to its sale to Ricard?

E17.13 (LO 2) (Allocate Transaction Price) Crankshaft Company manufactures products ranging from simple automated machinery to complex systems containing numerous components. Unit selling prices range from $200,000 to $1,500,000 and are quoted inclusive of installation. The installation process does not involve changes to the features of the equipment and does not require proprietary information about the equipment in order for the installed equipment to perform to specifications. Crankshaft has the following arrangement with Winkerbean Inc.

- Winkerbean purchases equipment from Crankshaft for a price of $1,000,000 and contracts with Crankshaft to install the equipment. Crankshaft charges the same price for the equipment irrespective of whether it does the installation or not. Using market data, Crankshaft determines installation service is estimated to have a standalone selling price of $50,000. The cost of the equipment is $600,000.
- Winkerbean is obligated to pay Crankshaft the $1,000,000 upon the delivery of the equipment.

Crankshaft delivers the equipment on June 1, 2025, and completes the installation of the equipment on September 30, 2025. The equipment has a useful life of 10 years. Assume that the equipment and the installation are two distinct performance obligations which should be accounted for separately.

Instructions

a. How should the transaction price of $1,000,000 be allocated among the service obligations?

b. Prepare the journal entries for Crankshaft for this revenue arrangement on June 1, 2025 and September 30, 2025, assuming Crankshaft receives payment when installation is completed.

E17.14 (LO 2) (Allocate Transaction Price) Refer to the revenue arrangement in E17.13.

Instructions

Repeat requirements (a) and (b) assuming Crankshaft does not have market data with which to determine the standalone selling price of the installation services. As a result, an expected cost plus margin approach is used. The cost of installation is $36,000; Crankshaft prices these services with a 25% margin relative to cost.

E17.15 (LO 2) (Allocate Transaction Price) Appliance Center is an experienced home appliance dealer. Appliance Center also offers a number of services for the home appliances that it sells. Assume that Appliance Center sells ovens on a standalone basis. Appliance Center also sells installation services and maintenance services for ovens. However, Appliance Center does not offer installation or maintenance services to customers who buy ovens from other vendors. Pricing for ovens is as follows.

Oven only	$ 800
Oven with installation service	850
Oven with maintenance services	975
Oven with installation and maintenance services	1,000

In each instance in which maintenance services are provided, the maintenance service is separately priced within the arrangement at $175. Additionally, the incremental amount charged by Appliance Center for installation approximates the amount charged by independent third parties. Ovens are sold subject to a general right of return. If a customer purchases an oven with installation and/or maintenance services, in the event Appliance Center does not complete the service satisfactorily, the customer is only entitled to a refund of the portion of the fee that exceeds $800.

Instructions

a. Assume that a customer purchases an oven with both installation and maintenance services for $1,000. Based on its experience, Appliance Center believes that it is probable that the installation of the equipment will be performed satisfactorily to the customer. Assume that the maintenance services are priced separately (i.e., the three components are distinct). Identify the separate performance obligations related to the Appliance Center revenue arrangement.

b. Indicate the amount of revenue that should be allocated to the oven, the installation, and to the maintenance contract.

E17.16 (LO 3) Excel (Sales with Returns) On March 10, 2025, Steele Company sold to Barr Hardware 200 tool sets at a price of $50 each (cost $30 per set) with terms of n/60, f.o.b. shipping point. Steele allows Barr to return any unused tool sets within 60 days of purchase. Steele estimates that (1) 10 sets will

be returned, (2) the cost of recovering the products will be immaterial, and (3) the returned tools sets can be resold at a profit. On March 25, 2025, Barr returned six tool sets and received a credit to its account.

Instructions

a. Prepare journal entries for Steele to record (1) the sale on March 10, 2025, (2) the return on March 25, 2025, and (c) any adjusting entries required on March 31, 2025 (when Steele prepares financial statements). Steele believes the original estimate of returns is correct.

b. Indicate the income statement and balance sheet reporting by Steele at March 31, 2025, of the information related to the Barr sales transaction.

E17.17 (LO 3) Excel **(Sales with Returns)** Refer to the revenue arrangement in E17.16. Assume that instead of selling the tool sets on credit, that Steele sold them for cash.

Instructions

a. Prepare journal entries for Steele to record (1) the sale on March 10, 2025, (2) the return on March 25, 2025, and (c) any adjusting entries required on March 31, 2025 (when Steele prepares financial statements). Steele believes the original estimate of returns is correct.

b. Indicate the income statement and balance sheet reporting by Steele at March 31, 2025, of the information related to the Barr sale.

E17.18 (LO 3) Excel **(Sales with Allowances)** On October 2, 2025, Laplante Company sold $6,000 of its elite camping gear (with a cost of $3,600) to Lynch Outfitters. As part of the sales agreement, Laplante includes a provision that if Lynch is dissatisfied with the product, Laplante will grant an allowance on the sales price or agree to take the product back (although returns are rare, given the long-term relationship between Laplante and Lynch). Lynch expects total allowances to Lynch to be $800. On October 16, 2025, Laplante grants an allowance of $400 to Lynch because the color for some of the items delivered was a bit different than what appeared in the catalog.

Instructions

a. Prepare journal entries for Laplante to record (1) the sale on October 2, 2025, (2) the granting of the allowance on October 16, 2025, and, (c) any adjusting required on October 31, 2025 (when Laplante prepares financial statements). Laplante now estimates additional allowances of $250 will be granted to Lynch in the future.

b. Indicate the income statement and balance sheet reporting by Laplante at October 31, 2025, of the information related to the Lynch transaction.

E17.19 (LO 3) Excel **(Sales with Returns)** On June 3, 2025, Hunt Company sold to Ann Mount merchandise having a sales price of $8,000 (cost $6,000) with terms of n/60, f.o.b. shipping point. Hunt estimates that merchandise with a sales value of $800 will be returned. An invoice totaling $120 was received by Mount on June 8 from Olympic Transport Service for the freight cost. Upon receipt of the goods, on June 8, Mount returned to Hunt $300 of merchandise containing flaws. Hunt estimates the returned items are expected to be resold at a profit. The freight on the returned merchandise was $24, paid by Hunt on June 8. On July 16, the company received a check for the balance due from Mount.

Instructions

Prepare journal entries for Hunt Company to record all the events in June and July.

E17.20 (LO 3) **(Sales with Returns)** Organic Growth Company is presently testing a number of new agricultural seed planters that it has recently developed. To stimulate interest, it has decided to grant to five of its largest customers the unconditional right of return of these products if not fully satisfied. The right of return extends for 4 months. Organic Growth estimates returns of 20%. Organic Growth sells these planters on account for $1,500,000 (cost $750,000) on January 2, 2025. Customers are required to pay the full amount due by March 15, 2025.

Instructions

a. Prepare the journal entry for Organic Growth at January 2, 2025.

b. Assume that one customer returns planters on March 1, 2025, due to unsatisfactory performance. Prepare the journal entry to record this transaction, assuming this customer purchased $100,000 of planters from Organic Growth.

c. Assume Organic Growth prepares financial statements quarterly. Prepare the necessary entries (if any) to adjust Organic Growth's financial results for the above transactions on March 31, 2025, assuming remaining expected returns of $200,000.

E17.21 (LO 3) (Sales with Returns) Uddin Publishing Co. publishes college textbooks that are sold to bookstores on the following terms. Each title has a fixed wholesale price, terms f.o.b. shipping point, and payment is due 60 days after shipment. The retailer may return a maximum of 30% of an order at the retailer's expense. Sales are made only to retailers who have good credit ratings. Past experience indicates that the normal return rate is 12%. The costs of recovery are expected to be immaterial, and the textbooks are expected to be resold at a profit.

Instructions

a. Identify the revenue recognition criteria that Uddin could employ concerning textbook sales.

b. Briefly discuss the reasoning for your answers in (a) above.

c. On July 1, 2025, Uddin shipped books invoiced at $15,000,000 (cost $12,000,000). Prepare the journal entry to record this transaction.

d. On October 3, 2025, $1.5 million of the invoiced July sales were returned according to the return policy, and the remaining $13.5 million was paid. Prepare the journal entries for the return and payment.

e. Assume Uddin prepares financial statements on October 31, 2025, the close of the fiscal year. No other returns are anticipated. Indicate the amounts reported on the income statement and balance related to the above transactions.

E17.22 (LO 3) (Sales with Repurchase) Cramer Corp. sells idle machinery to Enyart Company on July 1, 2025, for $40,000. Cramer agrees to repurchase this equipment from Enyart on June 30, 2026, for a price of $42,400 (an imputed interest rate of 6%).

Instructions

a. Prepare the journal entry for Cramer for the transfer of the asset to Enyart on July 1, 2025.

b. Prepare any other necessary journal entries for Cramer in 2025.

c. Prepare the journal entry for Cramer when the machinery is repurchased on June 30, 2026.

E17.23 (LO 3) (Repurchase Agreement) Zagat Inc. enters into an agreement on March 1, 2025, to sell Werner Metal Company aluminum ingots. As part of the agreement, Zagat also agrees to repurchase the ingots on May 1, 2025, at the original sales price of $200,000 plus 2%.

Instructions

a. Prepare Zagat's journal entry necessary on March 1, 2025.

b. Prepare Zagat's journal entry for the repurchase of the ingots on May 1, 2025.

E17.24 (LO 3) (Bill and Hold) Wood-Mode Company is involved in the design, manufacture, and installation of various types of wood products for large construction projects. Wood-Mode recently completed a large contract for Stadium Inc., which consisted of building 35 different types of concession counters for a new soccer arena under construction. The terms of the contract are that upon completion of the counters, Stadium would pay $2,000,000. Unfortunately, due to the depressed economy, the completion of the new soccer arena is now delayed. Stadium has therefore asked Wood-Mode to hold the counters for 2 months at its manufacturing plant until the arena is completed. Stadium acknowledges in writing that it ordered the counters and that they now have ownership. The time that Wood-Mode Company must hold the counters is totally dependent on when the arena is completed. Because Wood-Mode has not received additional progress payments for the counters due to the delay, Stadium has provided a deposit of $300,000.

Instructions

a. Explain this type of revenue recognition transaction.

b. What factors should be considered in determining when to recognize revenue in this transaction?

c. Prepare the journal entry(ies) that Wood-Mode should make, assuming it signed a valid sales contract to sell the counters and received at the time the $300,000 deposit.

E17.25 (LO 3) (Consignment Sales) On May 3, 2025, Eisler Company consigned 80 freezers, costing $500 each, to Remmers Company. The cost of shipping the freezers amounted to $840 and was paid by Eisler Company. On December 30, 2025, a report was received from the consignee, indicating that 40 freezers had been sold for $750 each. Remittance was made by the consignee for the amount due after deducting a commission of 6%, advertising of $200, and total installation costs of $320 on the freezers sold.

Instructions

a. Compute the inventory value of the units unsold in the hands of the consignee.

b. Compute the profit for the consignor for the units sold.

c. Compute the amount of cash that will be remitted by the consignee.

E17.26 (LO 3) (Warranty Arrangement) On January 2, 2025, Grando Company sells production equipment to Fargo Inc. for $50,000. Grando includes a 2-year assurance warranty service with the sale of all its equipment. The customer receives and pays for the equipment on January 2, 2025. During 2025, Grando incurs costs related to warranties of $900. At December 31, 2025, Grando estimates that $650 of warranty costs will be incurred in the second year of the warranty.

Instructions

a. Prepare the journal entry to record this transaction on January 2, 2025, and on December 31, 2025 (assuming financial statements are prepared on December 31, 2025).

b. Repeat the requirements for (a), assuming that in addition to the assurance warranty, Grando sold Fargo an extended warranty (service-type warranty) for an additional 2 years (2027–2028) for $800.

E17.27 (LO 3) (Warranties) Celic Inc. manufactures and sells computers that include an assurance-type warranty for the first 90 days. Celic offers an optional extended coverage plan under which it will repair or replace any defective part for 3 years from the expiration of the assurance-type warranty. Because the optional extended coverage plan is sold separately, Celic determines that the 3 years of extended coverage represents a separate performance obligation. The total transaction price for the sale of a computer and the extended warranty is $3,600 on October 1, 2025, and Celic determines the standalone selling price of each is $3,200 and $400, respectively. Further, Celic estimates, based on historical experience, it will incur $200 in costs to repair defects that arise within the 90-day coverage period for the assurance-type warranty. The cost of the equipment is $1,440. Assume that the $200 in costs to repair defects in the computers occurred on October 25, 2025.

Instructions

a. Prepare the journal entry(ies) to record the October transactions related to sale of the computers.

b. Briefly describe the accounting for the service-type warranty after the 90-day assurance-type warranty period.

E17.28 (LO 4) (Existence of a Contract) On January 1, 2025, Gordon Co. enters into a contract to sell a customer a wiring base and shelving unit that sits on the base in exchange for $3,000. The contract requires delivery of the base first but states that payment for the base will not be made until the shelving unit is delivered. Gordon identifies two performance obligations and allocates $1,200 of the transaction price to the wiring base and the remainder to the shelving unit. The cost of the wiring base is $700; the shelves have a cost of $320.

Instructions

a. Prepare the journal entry on January 1, 2025, for Gordon.

b. Prepare the journal entry on February 5, 2025, for Gordon when the wiring base is delivered to the customer.

c. Prepare the journal entry on February 25, 2025, for Gordon when the shelving unit is delivered to the customer and Gordon receives full payment.

E17.29 (LO 4) (Contract Modification) In September 2025, Gaertner Corp. commits to selling 150 of its iPhone-compatible docking stations to Better Buy Co. for $15,000 ($100 per product). The stations are delivered to Better Buy over the next 6 months. After 90 stations are delivered, the contract is modified and Gaertner promises to deliver an additional 45 products for an additional $4,275 ($95 per station). All sales are cash on delivery.

Instructions

a. Prepare the journal entry for Gaertner for the sale of the first 90 stations. The cost of each station is $54.

b. Prepare the journal entry for the sale of 10 more stations after the contract modification, assuming that the price for the additional stations reflects the standalone selling price at the time of the contract modification. In addition, the additional stations are distinct from the original products as Gaertner regularly sells the products separately.

c. Prepare the journal entry for the sale of 10 more stations (as in (b)), assuming that the pricing for the additional products **does not** reflect the standalone selling price of the additional products and the prospective method is used.

E17.30 (LO 4) (Contract Modification) Tyler Financial Services performs bookkeeping and tax-reporting services to startup companies in the Oconomowoc area. On January 1, 2025, Tyler entered into a 3-year service contract with Walleye Tech. Walleye promises to pay $10,000 at the beginning of

each year, which at contract inception is the standalone selling price for these services. At the end of the second year, the contract is modified and the fee for the third year of services is reduced to $8,000. In addition, Walleye agrees to pay an additional $20,000 at the beginning of the third year to cover the contract for 3 additional years (i.e., 4 years remain after the modification). The extended contract services are similar to those provided in the first 2 years of the contract.

Instructions

a. Prepare the journal entries for Tyler in 2025 and 2026 related to this service contract.

b. Prepare the journal entries for Tyler in 2027 related to the modified service contract, assuming a prospective approach.

c. Repeat the requirements for part (b), assuming Tyler and Walleye agree on a revised set of services (fewer bookkeeping services but more tax services) in the extended contract period and the modification results in a separate performance obligation.

E17.31 (LO 4) (Contract Costs) Rex's Reclaimers entered into a contract with Dan's Demolition to manage the processing of recycled materials on Dan's various demolition projects. Services for the 3-year contract include collecting, sorting, and transporting reclaimed materials to recycling centers or contractors who will reuse them. Rex's incurs selling commission costs of $2,000 to obtain the contract. Before performing the services, Rex's also designs and builds receptacles and loading equipment that interfaces with Dan's demolition equipment at a cost of $27,000. These receptacles and equipment are retained by Rex's and can be used for other projects. Dan's promises to pay a fixed fee of $12,000 per year, payable every 6 months for the services under the contract. Rex's incurs the following costs: design services for the receptacles to interface with Dan's equipment $3,000, loading equipment controllers $6,000, and special testing and OSHA inspection fees $2,000 (some of Dan's projects are on government property).

Instructions

a. Determine the costs that should be capitalized as part of Rex's Reclaimers revenue arrangement with Dan's Demolition.

b. Dan's also expects to incur general and administrative costs related to this contract, as well as costs of wasted materials and labor that likely cannot be factored into the contract price. Can these costs be capitalized? Explain.

E17.32 (LO 4) (Contract Costs, Collectibility) Refer to the information in E17.31.

Instructions

a. Does the accounting for capitalized costs change if the contract is for 1 year rather than 3 years? Explain.

b. Dan's Demolition is a startup company; as a result, there is more than insignificant uncertainty about Dan's ability to make the 6-month payments on time. Does this uncertainty affect the amount of revenue to be recognized under the contract? Explain.

***E17.33 (LO 5, 6) (Recognition of Profit on Long-Term Contracts)** During 2025, Nilsen Company started a construction job with a contract price of $1,600,000. The job was completed in 2027. The following information is available.

	2025	2026	2027
Costs incurred to date	$400,000	$825,000	$1,070,000
Estimated costs to complete	600,000	275,000	–0–
Billings to date	300,000	900,000	1,600,000
Collections to date	270,000	810,000	1,425,000

Instructions

a. Compute the amount of gross profit to be recognized each year, assuming the percentage-of-completion method is used.

b. Prepare all necessary journal entries for 2026.

c. Compute the amount of gross profit to be recognized each year, assuming the cost-recovery method is used.

***E17.34 (LO 5) (Analysis of Percentage-of-Completion Financial Statements)** In 2025, Steinrotter Construction Corp. began construction work under a 3-year contract. The contract price was $1,000,000. Steinrotter uses the percentage-of-completion method for financial accounting purposes. The

income to be recognized each year is based on the proportion of cost incurred to total estimated costs for completing the contract. The financial statement presentations relating to this contract at December 31, 2025, are shown below.

Balance Sheet		
Accounts receivable		$18,000
Construction in process	$65,000	
Less: Billings	61,500	
Costs and recognized profit in excess of billings		3,500
Income Statement		
Income (before tax) on the contract recognized in 2025		$19,500

Instructions

a. How much cash was collected in 2025 on this contract?

b. What was the initial estimated total income before tax on this contract?

(AICPA adapted)

*E17.35 (LO 5) Excel **(Gross Profit on Uncompleted Contract)** On April 1, 2025, Dougherty Inc. entered into a cost plus fixed fee contract to construct an electric generator for Altom Corporation. At the contract date, Dougherty estimated that it would take 2 years to complete the project at a cost of $2,000,000. The fixed fee stipulated in the contract is $450,000. Dougherty appropriately accounts for this contract under the percentage-of-completion method. During 2025, Dougherty incurred costs of $800,000 related to the project. The estimated cost at December 31, 2025, to complete the contract is $1,200,000. Altom was billed $600,000 under the contract.

Instructions

Prepare a schedule to compute the amount of gross profit to be recognized by Dougherty under the contract for the year ended December 31, 2025. Show supporting computations in good form.

(AICPA adapted)

*E17.36 (LO 5, 6) **(Recognition of Revenue on Long-Term Contract and Entries)** Hamilton Construction Company uses the percentage-of-completion method of accounting. In 2025, Hamilton began work under contract #E2-D2, which provided for a contract price of $2,200,000. Other details follow:

	2025	2026
Costs incurred during the year	$640,000	$1,425,000
Estimated costs to complete, as of December 31	960,000	–0–
Billings during the year	420,000	1,680,000
Collections during the year	350,000	1,500,000

Instructions

a. What portion of the total contract price would be recognized as revenue in 2025? In 2026?

b. Assuming the same facts as those above except that Hamilton uses the cost-recovery method of accounting, what portion of the total contract price would be recognized as revenue in 2026?

c. Prepare a complete set of journal entries for 2025 (using the percentage-of-completion method).

*E17.37 (LO 5, 6) **(Recognition of Profit and Balance Sheet Amounts for Long-Term Contracts)** Yanmei Construction Company began operations on January 1, 2025. During the year, Yanmei Construction entered into a contract with Lundquist Corp. to construct a manufacturing facility. At that time, Yanmei estimated that it would take 5 years to complete the facility at a total cost of $4,500,000. The total contract price for construction of the facility is $6,000,000. During the year, Yanmei incurred $1,185,800 in construction costs related to the construction project. The estimated cost to complete the contract is $4,204,200. Lundquist Corp. was billed and paid 25% of the contract price.

Instructions

Prepare schedules to compute the amount of gross profit to be recognized for the year ended December 31, 2025, and the amount to be shown as "costs and recognized profit in excess of billings" or "billings in excess of costs and recognized profit" at December 31, 2025, under each of the following methods. Show supporting computations in good form.

a. Cost-recovery method.

b. Percentage-of-completion method.

(AICPA adapted)

*E17.38 (LO 8) **(Franchise Entries)** Pacific Crossburgers Inc. charges an initial franchise fee of $70,000. Upon the signing of the agreement (which covers 3 years after commencement of operations), a payment of $28,000 is due. Thereafter, three annual payments of $14,000 are required. The credit rating of the franchisee is such that it would have to pay interest at 10% to borrow money. The franchise agreement is signed on May 1, 2025, and the franchise commences operation on July 1, 2025.

Instructions

Prepare the journal entries in 2025 for the franchisor under the following assumptions. (Round to the nearest dollar.)

a. No future services are required by the franchisor once the franchise starts operations.

b. The franchisor has substantial services to perform, once the franchise begins operations, to maintain the value of the franchise.

c. The total franchise fee includes training services (with a value of $2,400) for the period leading up to the franchise opening and for 2 months following opening.

*E17.39 (LO 8) **(Franchise Fee, Initial Down Payment)** On January 1, 2025, Lesley Benjamin signed an agreement, covering 5 years, to operate as a franchisee of Campbell Inc. for an initial franchise fee of $50,000. The amount of $10,000 was paid when the agreement was signed, and the balance is payable in five annual payments of $8,000 each, beginning January 1, 2026. The agreement provides that the down payment is nonrefundable and that no future services are required of the franchisor once the franchise commences operations on April 1, 2025. Lesley Benjamin's credit rating indicates that she can borrow money at 11% for a loan of this type.

Instructions

a. Prepare journal entries for Campbell for 2025-related revenue for this franchise arrangement.

b. Prepare journal entries for Campbell for 2025-related revenue for this franchise arrangement, assuming that in addition to the franchise rights, Campbell also provides 1 year of operational consulting and training services, beginning on the signing date. These services have a value of $3,600.

c. Repeat the requirements for part (a), assuming that Campbell must provide services to Benjamin throughout the franchise period to maintain the franchise value.

Problems

P17.1 (LO 2, 3) **(Allocate Transaction Price, Upfront Fees)** Tablet Tailors sells tablet PCs combined with Internet service, which permits the tablet to connect to the Internet anywhere and set up a Wi-Fi hot spot. It offers two bundles with the following terms.

1. Tablet Bundle A sells a tablet with 3 years of Internet service. The price for the tablet and a 3-year Internet connection service contract is $500. The standalone selling price of the tablet is $250 (the cost to Tablet Tailors is $175). Tablet Tailors sells the Internet access service independently for an upfront payment of $300. On January 2, 2025, Tablet Tailors signed 100 contracts, receiving a total of $50,000 in cash.
2. Tablet Bundle B includes the tablet and Internet service plus a service plan for the tablet PC (for any repairs or upgrades to the tablet or the Internet connections) during the 3-year contract period. That product bundle sells for $600. Tablet Tailors provides the 3-year tablet service plan as a separate product with a standalone selling price of $150. Tablet Tailors signed 200 contracts for Tablet Bundle B on July 1, 2025, receiving a total of $120,000 in cash.

Instructions

a. Prepare any journal entries to record the revenue arrangement for Tablet Bundle A on January 2, 2025, and December 31, 2025.

b. Prepare any journal entries to record the revenue arrangement for Tablet Bundle B on July 1, 2025, and December 31, 2025.

c. Repeat the requirements for part (a), assuming that Tablet Tailors has no reliable data with which to estimate the standalone selling price for the Internet service.

P17.2 (LO 2, 3, 4) **(Allocate Transaction Price, Modification of Contract)** Refer to the Tablet Bundle A revenue arrangement in P17.1. In response to competitive pressure for Internet access for

Tablet Bundle A, after 2 years of the 3-year contract, Tablet Tailors offers a modified contract and extension incentive. The extended contract services are similar to those provided in the first 2 years of the contract. Signing the extension and paying $90 (which equals the standalone selling of the revised Internet service package) extends access for 2 more years of Internet connection. Forty Tablet Bundle A customers sign up for this offer.

Instructions

a. Prepare the journal entries when the contract is signed on January 2, 2027, for the 40 extended contracts. Assume the modification does not result in a separate performance obligation.

b. Prepare the journal entries on December 31, 2027, for the 40 extended contracts (the first year of the revised 3-year contract).

P17.3 (LO 2, 3) (Allocate Transaction Price, Discounts, Time Value) Grill Master Company sells total outdoor grilling solutions, providing gas and charcoal grills, accessories, and installation services for custom patio grilling stations.

Instructions

Respond to the requirements related to the following independent revenue arrangements for Grill Master products and services.

a. Grill Master offers contract GM205, which is comprised of a free-standing gas grill for small patio use plus installation to a customer's gas line for a total price $800. On a standalone basis, the grill sells for $700 (cost $425), and Grill Master estimates that the standalone selling price of the installation service (based on cost-plus estimation) is $150. (The selling of the grill and the installation services should be considered two performance obligations.) Grill Master signed 10 GM205 contracts on April 20, 2025, and customers paid the contract price in cash. The grills were delivered and installed on May 15, 2025. Prepare journal entries for Grill Master for GM205 in April and May 2025.

b. The State of Kentucky is planning major renovations in its parks during 2025 and enters into a contract with Grill Master to purchase 400 durable, easy maintenance, standard charcoal grills during 2025. The grills are priced at $200 each (with a cost of $160 each), and Grill Master provides a 6% volume discount if Kentucky purchases at least 300 grills during 2025. On April 17, 2025, Grill Master delivered and received payment for 280 grills. Based on prior experience with the State of Kentucky renovation projects, the delivery of this many grills makes it certain that Kentucky will meet the discount threshold. Prepare the journal entries for Grill Master for grills sold on April 17, 2025. Assume the company records sales transaction net.

c. Grill Master sells its specialty combination gas/wood-fired grills to local restaurants. Each grill is sold for $1,000 (cost $550) on credit with terms 3/30, net/90. Prepare the journal entries for the sale of 20 grills on September 1, 2025, and upon payment, assuming the customer paid on (1) September 25, 2025, and (2) October 15, 2025. Assume the company records sales net.

d. On October 1, 2025, Grill Master sold one of its super deluxe combination gas/charcoal grills to a local builder. The builder plans to install it in one of its "Parade of Homes" houses. Grill Master accepted a 3-year, zero-interest-bearing note with face amount of $5,324. The grill has an inventory cost of $2,700. An interest rate of 10% is an appropriate market rate of interest for this customer. Prepare the journal entries on October 1, 2025, and December 31, 2025.

P17.4 (LO 2, 3) (Allocate Transaction Price, Discounts, Time Value) Economy Appliance Co. manufactures low-price, no-frills appliances that are in great demand for rental units. Pricing and cost information on Economy's main products are as follows.

Item	Standalone Selling Price (Cost)
Refrigerator	$500 ($260)
Range	560 (275)
Stackable washer/dryer unit	700 (400)

Customers can contract to purchase either individually at the stated prices or a three-item bundle with a price of $1,800. The bundle price includes delivery and installation. Economy also provides installation (not a separate performance obligation).

Instructions

Respond to the requirements related to the following independent revenue arrangements for Economy Appliance Co.

a. On June 1, 2025, Economy sold 100 washer/dryer units without installation to Laplante Rentals for $70,000. Laplante is a newer customer and is unsure how this product will work in its older rental units. Economy offers a 60-day return privilege and estimates, based on prior experience with sales

on this product, 4% of the units will be returned. Prepare the journal entries for the sale and related cost of goods sold on June 1, 2025.

b. YellowCard Property Managers operates upscale student apartment buildings. On May 1, 2025, Economy signs a contract with YellowCard for 300 appliance bundles to be delivered and installed in one of its new buildings. YellowCard pays 20% cash at contract signing and will pay the balance upon installation no later than August 1, 2025. Prepare journal entries for Economy on (1) May 1, 2025, and (2) August 1, 2025, when all appliances are installed.

c. Refer to the arrangement in part (b). It would help YellowCard secure lease agreements with students if the installation of the appliance bundles can be completed by July 1, 2025. YellowCard offers a 10% bonus payment if Economy can complete installation by July 1, 2025. Economy estimates its chances of meeting the bonus deadline to be 90%, based on a number of prior contracts of similar scale. Repeat the requirement for part (b), given this bonus provision. Assume installation is completed by July 1, 2025.

d. Epic Rentals would like to take advantage of the bundle price for its 400-unit project; on February 1, 2025, Economy signs a contract with Epic for 400 bundles. Under the agreement, Economy will hold the appliance bundles in its warehouses until the new rental units are ready for installation. Epic pays 10% cash at contract signing. On April 1, 2025, Economy completes manufacture of the appliances in the Epic bundle order and places them in the warehouse. Economy and Epic have documented the warehouse arrangement and identified the units designated for Epic. The units are ready to ship, and Economy may not sell these units to other customers. Prepare journal entries for Economy on (1) February 1, 2025, and (2) April 1, 2025.

P17.5 (LO 2, 3) (Allocate Transaction Price, Returns, and Consignments) Ritt Ranch & Farm is a distributor of ranch and farm equipment. Its products range from small tools, power equipment for trench-digging and fencing, grain dryers, and barn winches. Most products are sold direct via its company catalog and Internet site. However, given some of its specialty products, select farm implement stores carry Ritt's products. Pricing and cost information on three of Ritt's most popular products are as follows.

Item	Standalone Selling Price (Cost)
Mini-trencher	$ 3,600 ($2,000)
Power fence hole auger	1,200 (800)
Grain/hay dryer	14,000 (11,000)

Instructions

Respond to the requirements related to the following independent revenue arrangements for Ritt Ranch & Farm.

a. On January 1, 2025, Ritt sells 40 augers to Mills Farm & Fleet for $48,000. Mills signs a 6-month note at an annual interest rate of 12%. Ritt allows Mills to return any auger that it cannot use within 60 days and receive a full refund. Based on prior experience, Ritt estimates that 5% of units sold to customers like Mills will be returned (using the most likely outcome approach). Ritt's costs to recover the products will be immaterial, and the returned augers are expected to be resold at a profit. Prepare the journal entry for Ritt on January 1, 2025.

b. On August 10, 2025, Ritt sells 16 mini-trenchers to a farm co-op in western Minnesota on account. Ritt provides a 4% volume discount on the mini-trenchers if the co-op has a 15% increase in purchases from Ritt compared to the prior year. Given the slowdown in the farm economy, sales to the co-op have been flat, and it is highly uncertain that the benchmark will be met. Prepare the journal entry for Ritt on August 10, 2025.

c. Ritt sells three grain/hay dryers to a local farmer at a total contract price of $45,200. In addition to the dryers, Ritt provides installation, which has a standalone selling price of $1,000 per unit installed. The contract payment also includes a $1,200 maintenance plan for the dryers for 3 years after installation. Ritt signs the contract on June 20, 2025, and receives a 20% down payment from the farmer. The dryers are delivered and installed on October 1, 2025, and full payment is made to Ritt. Prepare the journal entries for Ritt in 2025 related to this arrangement.

d. On April 25, 2025, Ritt ships 100 augers to Farm Depot, a farm supply dealer in Nebraska, on consignment. By June 30, 2025, Farm Depot has sold 60 of the consigned augers at the listed price of $1,200 per unit. Farm Depot notifies Ritt of the sales, retains a 10% commission, and remits the cash due Ritt. Prepare the journal entries for Ritt and Farm Depot for the consignment arrangement.

P17.6 (LO 2, 3) (Warranty, Customer Loyalty Program) Hale Hardware takes pride as the "shop around the corner" that can compete with the big-box home improvement stores by providing good service from knowledgeable sales associates (many of whom are retired local handymen). Hale has developed the following two revenue arrangements to enhance its relationships with customers and increase its bottom line.

1. Hale sells a specialty portable winch that is popular with many of the local customers for use at their lake homes (putting docks in and out, launching boats, etc.). The Hale winch is a standard manufacture winch that Hale modifies so the winch can be used for a variety of tasks. Hale sold 70 of these winches during 2025 at a total price of $21,000, with a warranty guarantee that the product was free of any defects. The cost of winches sold is $16,000. The assurance warranties extend for a 3-year period with an estimated cost of $2,100. In addition, Hale sold extended warranties related to 20 Hale winches for 2 years beyond the 3-year period for $400 each.
2. To bolster its already strong customer base, Hale implemented a customer loyalty program that rewards a customer with 1 loyalty point for every $10 of purchases on a select group of Hale products. Each point is redeemable for a $1 discount on any purchases of Hale merchandise in the following 2 years. During 2025, customers purchased select group products for $100,000 (all products are sold to provide a 45% gross profit) and earned 10,000 points redeemable for future purchases. The stand-alone selling price of the purchased products is $100,000. Based on prior experience with incentives programs like this, Hale expects 9,500 points to be redeemed related to these sales (Hale appropriately uses this experience to estimate the value of future consideration related to bonus points).

Instructions

a. Identify the separate performance obligations in the Hale warranty and bonus point programs, and briefly explain the point in time when the performance obligations are satisfied.

b. Prepare the journal entries for Hale related to the sales of Hale winches with warranties.

c. Prepare the journal entries for the bonus point sales for Hale in 2025.

d. How much additional sales revenue is recognized by Hale in 2026, assuming 4,500 bonus points are redeemed?

P17.7 (LO 2) (Customer Loyalty Program) Martz Inc. has a customer loyalty program that rewards a customer with 1 customer loyalty point for every $10 of purchases. Each point is redeemable for a $3 discount on any future purchases. On July 2, 2025, customers purchase products for $300,000 (with a cost of $171,000) and earn 30,000 points redeemable for future purchases. Martz expects 25,000 points to be redeemed. Martz estimates a standalone selling price of $2.50 per point (or $75,000 total) on the basis of the likelihood of redemption. The points provide a material right to customers that they would not receive without entering into a contract. As a result, Martz concludes that the points are a separate performance obligation.

Instructions

a. Determine the transaction price for the product and the customer loyalty points.

b. Prepare the journal entries to record the sale of the product and related points on July 2, 2025.

c. At the end of the first reporting period (July 31, 2025), 10,000 loyalty points are redeemed. Martz continues to expect 25,000 loyalty points to be redeemed in total. Determine the amount of loyalty point revenue to be recognized at July 31, 2025.

P17.8 (LO 2) (Time Value, Gift Cards, Discounts) Presented below are two independent revenue arrangements for Colbert Company.

Instructions

Respond to the requirements related to each revenue arrangement.

a. Colbert sells 3D printer systems. Recently, Colbert provided a special promotion of zero-interest financing for 2 years on any new 3D printer system. Assume that Colbert sells Lyle Cartright a 3D system, receiving a $5,000 zero-interest-bearing note on January 1, 2025. The cost of the 3D printer system is $4,000. Colbert imputes a 6% interest rate on this zero-interest note transaction. Prepare the journal entry to record the sale on January 1, 2025, and compute the total amount of revenue to be recognized in 2025.

b. Colbert sells 20 nonrefundable $100 gift cards for 3D printer paper on March 1, 2025. The paper has a standalone selling price of $100 (cost $80). The gift cards expiration date is June 30, 2025. Colbert estimates that customers will not redeem 10% of these gift cards (breakage). The pattern of redemption is as follows.

	Redemption Total
March 31	50%
April 30	80
June 30	85

Prepare the 2025 journal entries related to the gift cards at March 1, March 31, April 30, and June 30. Colbert recognizes breakage when cards expire (June 30).

*P17.9 (LO 5, 6) Excel **(Recognition of Profit on Long-Term Contract)** Shanahan Construction Company has entered into a contract beginning January 1, 2025, to build a parking complex. It has been estimated that the complex will cost $600,000 and will take 3 years to construct. The complex will be billed to the purchasing company at $900,000. The following data pertain to the construction period.

	2025	2026	2027
Costs to date	$270,000	$450,000	$610,000
Estimated costs to complete	330,000	150,000	–0–
Progress billings to date	270,000	550,000	900,000
Cash collected to date	240,000	500,000	900,000

Instructions

a. Using the percentage-of-completion method, compute the estimated gross profit that would be recognized during each year of the construction period.

b. Using the cost-recovery method, compute the estimated gross profit that would be recognized during each year of the construction period.

*P17.10 (LO 5, 6, 7) **(Long-Term Contract with Interim Loss)** On March 1, 2025, Pechstein Construction Company contracted to construct a factory building for Fabrik Manufacturing Inc. for a total contract price of $8,400,000. The building was completed by October 31, 2027. The annual contract costs incurred, estimated costs to complete the contract, and accumulated billings to Fabrik for 2025, 2026, and 2027 are given below.

	2025	2026	2027
Contract costs incurred during the year	$2,880,000	$2,230,000	$2,190,000
Estimated costs to complete the contract at 12/31	3,520,000	2,190,000	–0–
Billings to Fabrik during the year	3,200,000	3,500,000	1,700,000

Instructions

a. Using the percentage-of-completion method, prepare schedules to compute the profit or loss to be recognized as a result of this contract for the years ended December 31, 2025, 2026, and 2027. (Ignore income taxes.)

b. Using the cost-recovery method, prepare schedules to compute the profit or loss to be recognized as a result of this contract for the years ended December 31, 2025, 2026, and 2027. (Ignore incomes taxes.)

*P17.11 (LO 5, 6, 7) Excel **(Long-Term Contract with an Overall Loss)** On July 1, 2025, Torvill Construction Company Inc. contracted to build an office building for Gumbel Corp. for a total contract price of $1,900,000. On July 1, Torvill estimated that it would take between 2 and 3 years to complete the building. On December 31, 2027, the building was deemed substantially completed. Following are accumulated contract costs incurred, estimated costs to complete the contract, and accumulated billings to Gumbel for 2025, 2026, and 2027.

	At 12/31/25	At 12/31/26	At 12/31/27
Contract costs incurred to date	$ 300,000	$1,200,000	$2,100,000
Estimated costs to complete the contract	1,200,000	800,000	–0–
Billings to Gumbel	300,000	1,100,000	1,850,000

Instructions

a. Using the percentage-of-completion method, prepare schedules to compute the profit or loss to be recognized as a result of this contract for the years ended December 31, 2025, 2026, and 2027. (Ignore income taxes.)

b. Using the cost-recovery method, prepare schedules to compute the profit or loss to be recognized as a result of this contract for the years ended December 31, 2025, 2026, and 2027. (Ignore income taxes.)

*P17.12 (LO 8) **(Franchise Revenue)** Amigos Burrito Inc. sells franchises to independent operators throughout the northwestern part of the United States. The contract with the franchisee includes the following provisions.

1. The franchisee is charged an initial fee of $120,000. Of this amount, $20,000 is payable when the agreement is signed, and a $100,000 zero-interest-bearing note is payable with a $20,000 payment at the end of each of the 5 subsequent years. The present value of an ordinary annuity of five annual receipts of $20,000, each discounted at 10%, is $75,816.

2. All of the initial franchise fee collected by Amigos is to be refunded and the remaining obligation canceled if, for any reason, the franchisee fails to open his or her franchise.
3. In return for the initial franchise fee, Amigos agrees to (a) assist the franchisee in selecting the location for the business, (b) negotiate the lease for the land, (c) obtain financing and assist with building design, (d) supervise construction, (e) establish accounting and tax records, and (f) provide expert advice over a 5-year period relating to such matters as employee and management training, quality control, and promotion. This continuing involvement by Amigos helps maintain the brand value of the franchise.
4. In addition to the initial franchise fee, the franchisee is required to pay to Amigos a monthly fee of 2% of sales for menu planning, recipe innovations, and the privilege of purchasing ingredients from Amigos at or below prevailing market prices.

Management of Amigos Burrito estimates that the value of the services rendered to the franchisee at the time the contract is signed amounts to at least $20,000. All franchisees to date have opened their locations at the scheduled time, and none have defaulted on any of the notes receivable. The credit ratings of all franchisees would entitle them to borrow at the current interest rate of 10%.

Instructions

a. Discuss the alternatives that Amigos Burrito Inc. might use to account for the franchise fees.

b. Prepare the journal entries for the initial and continuing franchise fees, assuming:

1. Franchise agreement is signed on January 5, 2025.
2. Amigos completes franchise startup tasks and the franchise opens on July 1, 2025.
3. The franchisee records $260,000 in sales in the first 6 months of operations and remits the monthly franchise fee on December 31, 2025.

c. Briefly describe the accounting for unearned franchise fees, assuming that Amigos has little or no involvement with the franchisee related to expert advice on employee and management training, quality control, and promotion, once the franchise opens.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ17.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What were P&G's net sales for 2020?

b. What was the percentage of increase or decrease in P&G's net sales from 2019 to 2020? From 2018 to 2019?

c. In its notes to the financial statements, what criteria does P&G use to recognize revenue?

d. How does P&G account for trade promotions? Does the accounting conform to accrual accounting concepts? Explain.

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ17.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What were Coca-Cola's and PepsiCo's net revenues (sales) for the year 2020? Which company increased its revenue more (dollars and percentage) from 2019 to 2020?

b. Are the revenue recognition policies of Coca-Cola and PepsiCo similar? Explain.

c. In which foreign countries (geographic areas) did Coca-Cola and PepsiCo experience significant revenues in 2020? Compare the amounts of foreign revenues to U.S. revenues for both Coca-Cola and PepsiCo.

Financial Statement Analysis Case: Westinghouse Electric Corporation

UYJ17.3 The following note appears in the "Summary of Significant Accounting Policies" section of the Annual Report of **Westinghouse Electric Corporation**.

> **Note 1 (in part): Revenue Recognition.** Sales are primarily recorded as products are shipped and services are rendered. The percentage-of-completion method of accounting is used for nuclear steam supply system orders with delivery schedules generally in excess of five years and for certain construction projects where this method of accounting is consistent with industry practice.
>
> WFSI revenues are generally recognized on the accrual method. When accounts become delinquent for more than two payment periods, usually 60 days, income is recognized only as payments are received. Such delinquent accounts for which no payments are received in the current month, and other accounts on which income is not being recognized because the receipt of either principal or interest is questionable, are classified as nonearning receivables.

Instructions

a. Identify the revenue recognition methods used by Westinghouse Electric as discussed in its note on significant accounting policies.

b. Under what conditions are the revenue recognition methods identified in the first paragraph of Westinghouse's note above acceptable?

c. From the information provided in the second paragraph of Westinghouse's note, identify the type of operation being described and defend the acceptability of the revenue recognition method.

Accounting, Analysis, and Principles

UYJ17.4 Diversified Industries manufactures sump-pumps. Its most popular product is called the Super Soaker, which has a retail price of $1,200 and costs $540 to manufacture. It sells the Super Soaker on a standalone basis directly to businesses. Diversified also provides installation services for these commercial customers, who want an emergency pumping capability (with regular and back-up generator power) at their businesses. Diversified also distributes the Super Soaker through a consignment agreement with **Menards**. Income data for the first quarter of 2025 from operations other than the Super Soaker are as follows.

Revenues	$9,500,000
Expenses	7,750,000

Diversified has the following information related to two Super Soaker revenue arrangements during the first quarter of 2025.

1. Diversified sells 30 Super Soakers to businesses in flood-prone areas for a total contract price of $54,600. In addition to the pumps, Diversified also provides installation (at a cost of $150 per pump). On a standalone basis, the fair value of this service is $200 per unit installed. The contract payment also includes a $10 per month service plan for the pumps for 3 years after installation (Diversified's cost to provide this service is $7 per month). The Super Soakers are delivered and installed on March 1, 2025, and full payment is made to Diversified. Any discount is applied to the pump/installation bundle.
2. Diversified ships 300 Super Soakers to Menards on consignment. By March 31, 2025, Menards has sold two-thirds of the consigned merchandise at the listed price of $1,200 per unit. Menards notifies Diversified of the sales, retains a 5% commission, and remits the cash due Diversified.

Accounting

Determine Diversified Industries' 2025 first-quarter net income. (Ignore taxes.)

Analysis

Determine free cash flow (see Chapter 4) for Diversified Industries for the first quarter of 2025. In the first quarter, Diversified had depreciation expense of $175,000 and a net increase in working capital (change in accounts receivable and accounts payable) of $250,000. In the first quarter, capital expenditures were $500,000; Diversified paid dividends of $120,000.

Principles

Explain how the five-step revenue recognition process, when applied to Diversified's two revenue arrangements, reflects the concept of control in the definition of an asset and trade-offs between relevance and faithful representation.

Developing Your Professional Skills

Critical-Thinking Cases

CT17.1 (LO 2, 3) (Five-Step Revenue Process) Revenue is recognized based on a five-step process that is applied to a company's revenue arrangements.

Instructions

a. Briefly describe the five-step process.

b. Explain the importance of contracts when analyzing revenue arrangements.

c. How are fair value measurement concepts applied in implementation of the five-step process?

d. How does the five-step process reflect application of the definitions of assets and liabilities?

CT17.2 (LO 1, 2, 3) (Satisfying Performance Obligations) Judy Schaeffer is getting up to speed on the new guidance on revenue recognition. She is trying to understand the revenue recognition principle as it relates to the five-step revenue recognition process.

Instructions

a. Describe the revenue recognition principle.

b. Briefly discuss how the revenue recognition principle relates to the definitions of assets and liabilities. What is the importance of control?

c. Judy recalls that previous revenue recognition guidance required that revenue not be recognized unless the revenue was realized or realizable (also referred to as collectibility). Is collectibility a consideration in the recognition of revenue? Explain.

CT17.3 (LO 1, 2, 3) (Recognition of Revenue—Theory) Revenue is usually recognized at the point of sale (a point in time). Under special circumstances, however, bases other than the point of sale are used for the timing of revenue recognition.

Instructions

a. Why is the point of sale usually used as the basis for the timing of revenue recognition?

b. Disregarding the special circumstances when bases other than the point of sale are used, discuss the merits of each of the following objections to the point-of-sale basis of revenue recognition:

1. It is too conservative because revenue is earned throughout the entire process of production.

2. It is not conservative enough because accounts receivable do not represent disposable funds, sales returns and allowances may be made, and collection and bad debt expenses may be incurred in a later period.

c. Revenue may also be recognized over time. Give an example of the circumstances in which revenue is recognized over time and the accounting merits of its use instead of the point-of-sale basis.

(AICPA adapted)

CT17.4 (LO 1, 2, 3) (Recognition of Revenue—Theory) Revenue is recognized for accounting purposes when a performance obligation is satisfied. In some situations, revenue is recognized over time as the fair values of assets and liabilities change. In other situations, however, accountants have developed guidelines for recognizing revenue at the point of sale.

Instructions

(Ignore income taxes.)

a. Explain and justify why revenue is often recognized at time of sale.

b. Explain in what situations it would be appropriate to recognize revenue over time.

CT17.5 (LO 2, 3) (Discounts) Fahey Company sells Stairmasters to a retailer, Physical Fitness, Inc., for $2,000,000. Fahey has a history of providing price concessions on this product if the retailer has difficulty selling the Stairmasters to customers. Fahey has experience with sales like these in the past and estimates that the maximum amount of price concessions is $300,000.

Instructions

a. Determine the amount of revenue that Fahey should recognize for the sale of Stairmasters to Physical Fitness, Inc.

b. According to GAAP, in some situations, the amount of revenue recognized may be constrained. Explain how the accounting for the Stairmasters sales might be affected by the revenue constraint due to variable consideration or returns.

c. Some believe that revenue recognition should be constrained by collectibility. Is such a view consistent with GAAP? Explain.

CT17.6 (LO 1, 2, 3) (Recognition of Revenue from Subscriptions) *Cutting Edge* is a monthly magazine that has been on the market for 18 months. It currently has a circulation of 1.4 million copies. Negotiations are underway to obtain a bank loan in order to update the magazine's facilities. *Cutting Edge* is producing close to capacity and expects to grow at an average of 20% per year over the next 3 years.

After reviewing the financial statements of *Cutting Edge*, Andy Rich, the bank loan officer, had indicated that a loan could be offered to *Cutting Edge* only if it could increase its current ratio and decrease its debt to equity ratio to a specified level. Jonathan Embry, the marketing manager of *Cutting Edge*, has devised a plan to meet these requirements. Embry indicates that an advertising campaign can be initiated to immediately increase circulation. The potential customers would be contacted after the purchase of another magazine's mailing list. The campaign would include:

1. An offer to subscribe to *Cutting Edge* at three-fourths the normal price.
2. A special offer to all new subscribers to receive the most current world atlas whenever requested at a guaranteed price of $2.
3. An unconditional guarantee that any subscriber will receive a full refund if dissatisfied with the magazine.

Although the offer of a full refund is risky, Embry claims that few people will ask for a refund after receiving half of their subscription issues. Embry notes that other magazine companies have tried this sales promotion technique and experienced great success. Their average cancellation rate was 25%. On average, each company increased its initial circulation threefold and in the long run increased circulation to twice that which existed before the promotion. In addition, 60% of the new subscribers are expected to take advantage of the atlas premium. Embry feels confident that the increased subscriptions from the advertising campaign will increase the current ratio and decrease the debt to equity ratio.

You are the controller of *Cutting Edge* and must give your opinion of the proposed plan.

Instructions

a. When should revenue from the new subscriptions be recognized?

b. How would you classify the estimated sales returns stemming from the unconditional guarantee?

c. How should the atlas premium be recorded? Is the estimated premium claims a liability? Explain.

d. Does the proposed plan achieve the goals of increasing the current ratio and decreasing the debt to equity ratio?

CT17.7 (LO 2, 3) (Recognition of Revenue—Bonus Points) Griseta & Dubel Inc. was formed early this year to sell merchandise credits to merchants, who distribute the credits free to their customers. For example, customers can earn additional credits based on the dollars they spend with a merchant (e.g., airlines and hotels). Accounts for accumulating the credits and catalogs illustrating the merchandise for which the credits may be exchanged are maintained online. Centers with inventories of merchandise premiums have been established for redemption of the credits. Merchants may not return unused credits to Griseta & Dubel.

The following schedule expresses Griseta & Dubel's expectations as to the percentages of a normal month's activity that will be attained. For this purpose, a "normal month's activity" is defined as the level of operations expected when expansion of activities ceases or tapers off to a stable rate. The company expects that this level will be attained in the third year and that sales of credits will average $6,000,000 per month throughout the third year.

Month	Actual Credit Sales Percent	Merchandise Premium Purchases Percent	Credit Redemptions Percent
6th	30%	40%	10%
12th	60	60	45
18th	80	80	70
24th	90	90	80
30th	100	100	95

Griseta & Dubel plans to adopt an annual closing date at the end of each 12 months of operation.

Instructions

a. Discuss the factors to be considered in determining when revenue should be recognized.

b. Apply the revenue recognition concepts to the Griseta & Dubel Inc. revenue arrangement.

c. Provide balance sheet accounts that should be used and indicate how each should be classified.

(AICPA adapted)

CT17.8 (LO 2, 3) Ethics (Revenue Recognition—Membership Fees) Midwest Health Club (MHC) offers 1-year memberships. Membership fees are due in full at the beginning of the individual membership period. As an incentive to new customers, MHC advertised that any customers not satisfied for any reason could receive a refund of the remaining portion of unused membership fees. As a result of this policy, Richard Nies, corporate controller, recognized revenue ratably over the life of the membership. MHC is in the process of preparing its year-end financial statements. Rachel Avery, MHC's treasurer, is concerned about the company's lackluster performance this year. She reviews the financial statements Nies prepared and tells Nies to recognize membership revenue when the fees are received.

Instructions

Answer the following questions.

a. What are the ethical issues involved?

b. What should Nies do?

*__CT17.9 (LO 5) Writing (Long-Term Contract—Percentage-of-Completion)__ Widjaja Company is accounting for a long-term construction contract using the percentage-of-completion method. It is a 4-year contract that is currently in its second year. The latest estimates of total contract costs indicate that the contract will be completed at a profit to Widjaja Company.

Instructions

a. What theoretical justification is there for Widjaja Company's use of the percentage-of-completion method?

b. How would progress billings be accounted for? Include in your discussion the classification of progress billings in Widjaja Company financial statements.

c. How would the income recognized in the second year of the 4-year contract be determined using the cost-to-cost method of determining percentage of completion?

d. What would be the effect on earnings per share in the second year of the 4-year contract of using the percentage-of-completion method instead of the cost-recovery method? Discuss.

(AICPA adapted)

FASB Codification References

[1] FASB ASC 606. [Predecessor literature: None.]
[2] FASB Accounting Standards Update No. 2014-09, *Revenue from Contracts with Customers* (Topic 606) (May 2014), Summary.
[3] FASB ASC 606-10-25-1 to 4. [Predecessor literature: None.]
[4] FASB ASC 606-10-25-15. [Predecessor literature: None.]
[5] FASB ASC 606-10-32-2 to 4. [Predecessor literature: None.]
[6] FASB ASC 606-10-32-31 to 35. [Predecessor literature: None.]
[7] FASB ASC 606-10-25-1 (e). [Predecessor literature: None.]
[8] FASB ASC 606-10-32-2 to 4. [Predecessor literature: None.]
[9] FASB ASC 606-10-32-5 to 9. [Predecessor literature: None.]
[10] FASB ASC 606-10-32-12. [Predecessor literature: None.]
[11] FASB ASC 606-10-32-11. [Predecessor literature: None.]
[12] FASB ASC 606-10-32-18. [Predecessor literature: None.]
[13] FASB ASC 606-10-32-12. [Predecessor literature: None.]
[14] FASB Accounting Standards Update No. 2014-09, *Revenue from Contracts with Customers* (Topic 606) (May 2014), pp. 5–6.
[15] FASB ASC 606-10-55-72. [Predecessor literature: None.]
[16] FASB ASC 606-10-25-30 and 606-10-55-408. [Predecessor literature: None.]
[17] FASB ASC 606-10-55-38 to 39. [Predecessor literature: None.]
[18] FASB ASC 606-10-25-12. [Predecessor literature: None.]
[19] FASB ASC 606-10-25-13. [Predecessor literature: None.]
[20] FASB ASC 606-10-50-1 to 21. [Predecessor literature: None.]
[21] FASB ASC 606-10-25-27 to 29. [Predecessor literature: None.]

[22] FASB ASC 606-10-25-27. [Predecessor literature: None.]
[23] FASB ASC 450 *(Contingencies)*.
[24] FASB ASC 606-10-55-54 to 64. [Predecessor literature: None.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE17.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of a customer?

b. What is a performance obligation?

c. How is standalone selling price defined?

d. What is a transaction price?

CE17.2 Briefly explain the conditions when a contract modification shall be accounted for as a separate performance obligation.

CE17.3 Describe the accounting for refund liabilities.

CE17.4 What procedures are followed in the allocation of a discount?

Codification Research Case

Employees at your company disagree about the accounting for sales returns. The sales manager believes that granting more generous return provisions can give the company a competitive edge and increase sales revenue. The controller cautions that, depending on the terms granted, loose return provisions might lead to non-GAAP revenue recognition. The company CFO would like you to research the issue to provide an authoritative answer.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses. (Provide paragraph citations.)

a. What is the authoritative literature addressing revenue recognition when right of return exists?

b. What is meant by "right of return"? "Bill and hold"?

c. Describe the accounting when there is a right of return.

d. When goods are sold on a bill-and-hold basis, what conditions must be met to recognize revenue upon receipt of the order?

Additional Professional Resources

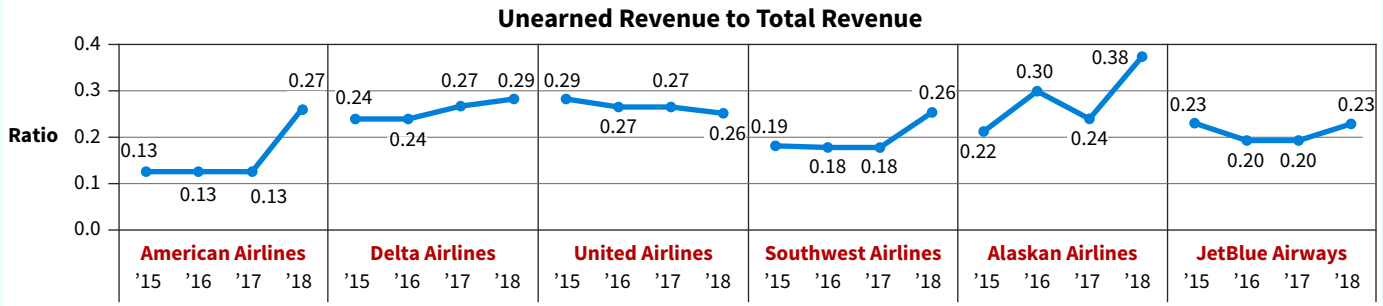
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Visualizations to Benchmark Revenue Results

DA17.1 Using financial statement data to benchmark results against other companies in the same industry is important for any company but especially relevant for new companies. Benchmarking industry-specific data allows new companies to evaluate their performance against more established organizations and can help provide timely feedback on initial policies and business practices.

Data visualizations bring together data from different financial statements, enhancing the insights we can gain from the information. For example, the following chart shows the ratio of unearned revenue to total earned revenue for several companies in the airline industry. Unearned revenue represents a significant liability for most airline companies, and this visualization can help management understand the relationship of that liability to future revenues.



Required

For this exercise, you will use data visualizations to answer several questions about the relationship between unearned and earned revenue for companies in the airline industry.

Go to Wiley Course Resources for complete details and instructions.

DA17.2 Is there a correlation between unearned and earned revenue? What conclusions can we reasonably draw based on the trends of unearned revenue in the airline industry? Data visualizations can offer initial insight into relationships and identify trends over time.

Required

Using the same visualizations from DA17.1, you will document any correlations among the revenue data and discuss trends in unearned revenue for the airline industry.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Estimate Sales Returns

DA17.3 Accounting systems hold a wealth of data that can unlock better estimates, management decisions, and business policies. Using analytical tools as accessible as Excel allows us to evaluate detailed transactional business data more than ever before.

Required

Using monthly sales and return data over a 5-year period, you will use Excel to create pivot tables and charts to evaluate trends in sales and returns data for a retail company. After creating visualizations in Excel, you will document your insights from the data.

Go to Wiley Course Resources for complete details and instructions.

CHAPTER 18

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Accounting for Income Taxes

WHAT is the purpose of accounting for income taxes?

In Chapter 12, you learned about the accounting for sales and payroll taxes, such as Social Security, Medicare, and state and federal unemployment taxes. Companies also pay income taxes on their earnings, just like individuals do, by filing a tax return each year. But, the tax expense reported on a company's GAAP financial statements differs from the taxes paid when filing a tax return. The reason? A company's financial statements and its tax return have different purposes and users. The financial statements are intended for investors, creditors, and other stakeholders. In contrast, the tax return is intended for a government body with the purpose of raising taxes to address public policy issues.

WHY is understanding the accounting for income taxes important?

Payment of income taxes represents one of a company's most significant cash payments in any given year. For example, recent financial statements for **Proctor & Gamble (P&G)** indicated that it paid $3.5 billion in taxes to various government agencies, but the income statement reported GAAP tax expense of $2.7 billion. The differences in the taxes paid (based on tax rules) and tax expense are caused by either permanent or temporary differences. The temporary differences give rise to deferred tax assets and deferred tax liabilities, as shown in the excerpt from P&G's balance sheet.

Proctor & Gamble
Balance Sheet (partial, in millions)

Deferred Tax Assets	
Pension and postretirement benefits	**$1,602**
Loss and other carryforwards	**875**
Stock-based compensation	**398**
Accrued marketing and promotion	**353**
Other (7 items)	**862**
Total	**$4,090**
Deferred Tax Liabilities	
Goodwill and intangible assets	**$5,775**
Fixed assets	**1,485**
Other (4 items)	**838**
Total	**$8,098**

These significant deferred assets and liabilities (P&G's total assets are nearly $121 billion) arise from timing differences between when tax and GAAP rules include the items in income. For example, as you learned in Chapter 15, the expense for stock-based compensation is recorded as a reduction in GAAP income over the service period. However, under the tax code, these costs are deducted from taxable income when employees exercise the options after the service period. That future deductible amount is recorded as an asset, because P&G will pay less taxes in the period of the exercise. Investors and creditors are keenly aware of these deferred tax assets and liabilities because they provide information about the amounts, timing, and uncertainty of future cash flows arising from these timing differences between tax and GAAP accounting rules.

HOW do companies account for income taxes?

The accounting for income taxes starts with determination of taxable income, computed by using the rules and regulations of the Internal Revenue Code. Taxable income is then multiplied by the enacted tax rate to determine income taxes payable. The items causing differences between taxable income and GAAP-based income—deferred tax assets and liabilities—are analyzed and accounted for depending on how those items impact future taxes owed. The net effect of the differences between changes in the deferred tax assets and the deferred tax liabilities is then added or subtracted from the income taxes payable to determine income tax expense. Income tax expense each period therefore equals income taxes payable adjusted for changes in deferred tax assets and deferred tax liabilities.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 18.1 Describe the fundamentals of accounting for income taxes.	**18.1 Fundamentals of Accounting for Income Taxes** • Future taxable amounts and deferred taxes • Future deductible amounts and deferred taxes • Valuation allowance	Example **18.1** Deferred Tax Liability **18.2** Income Tax Expense **18.3** Income Tax Expense—2026 **18.4** Income Tax Expense—2027 **18.5** Deferred Tax Asset **18.6** Income Tax Expense **18.7** Income Tax Expense—2026 **18.8** Deferred Tax Asset—Warranty **18.9** Valuation Allowance Put It into Practice LO 18.1 Apply Tax Fundamentals
LO 18.2 Identify additional issues in accounting for income taxes.	**18.2 Additional Considerations** • Specific differences • Tax rate considerations	Example **18.10** Originating / Reversing Differences **18.11** Temporary and Permanent Differences **18.12** Change in Tax Rates Put It into Practice LO 18.2 Account for Additional Issues
LO 18.3 Explain the accounting for loss carryforwards.	**18.3 Accounting for Net Operating Losses (NOLs)** • Loss carryforward • Loss carryforward examples	Example **18.13** Net Operating Loss (NOL) **18.14** NOL—2026 **18.15** NOL, Valuation Allowance **18.16** NOL, Valuation Allowance—2026 Put It into Practice LO 18.3 Record Loss Carryforward
LO 18.4 Describe the presentation of deferred income taxes in financial statements.	**18.4 Financial Statement Presentation** • Balance sheet • Note disclosure • Income statement • Asset-liability method	Example **18.17** Classification

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

18.1 Fundamentals of Accounting for Income Taxes

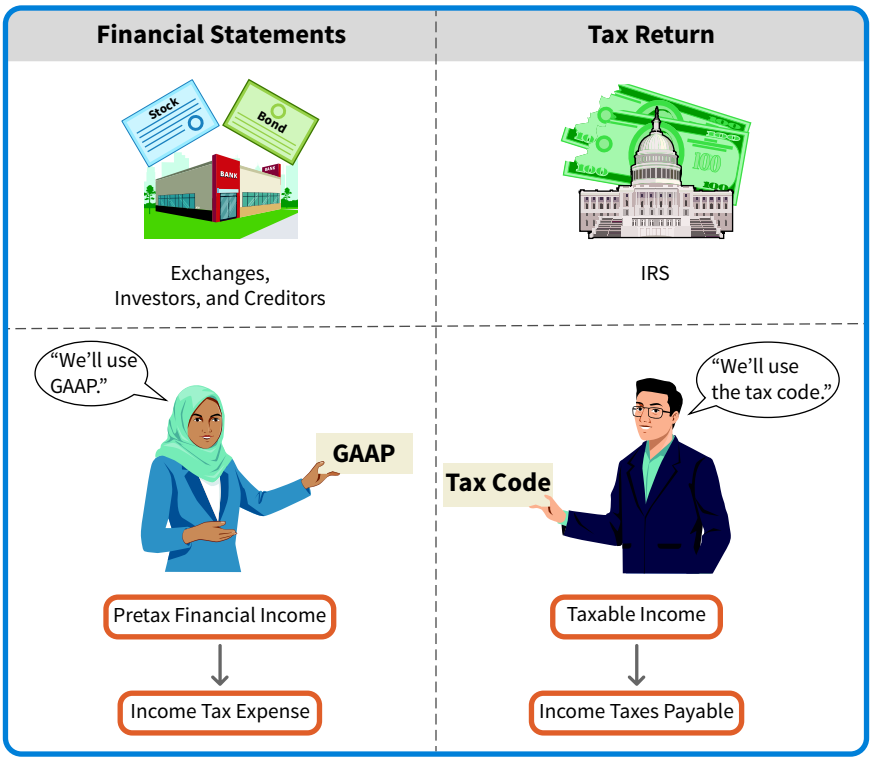
LEARNING OBJECTIVE 1

Describe the fundamentals of accounting for income taxes.

Benjamin Franklin once stated, "In this world nothing can be certain, except death and taxes." Which of these is worse? That might be debatable if you had to read the over 75,000 pages of the Internal Revenue Code. Fortunately, we are only covering the basic principles of income tax reporting in this chapter.

Up to this point, you have learned the basic guidelines that corporations use to report information to investors and creditors. Corporations also must file income tax returns following the guidelines developed by the **Internal Revenue Service (IRS)**. Because GAAP and tax regulations differ in a number of ways, pretax financial income on the income statement will differ from taxable income on the tax return. Consequently, the amount that a company reports as income tax expense on the income statement will differ from the amount of taxes payable to the IRS. **Illustration 18.1** highlights these differences.

ILLUSTRATION 18.1
Fundamental Differences Between Financial and Tax Reporting



Differences between pretax financial income and taxable income are as follows.

- **Pretax financial income** is a **financial reporting** term. It also is referred to as income before taxes, income for financial reporting purposes, or income for book purposes. Companies determine pretax financial income according to GAAP, which means they must follow **accrual-based accounting**. They measure pretax financial income with the objective of providing useful information to investors and creditors.

- **Taxable income**, or income for tax purposes, is a **tax accounting** term. It indicates the amount used to compute income taxes payable to the Internal Revenue Service (IRS). Companies determine taxable income according to the Internal Revenue Code (the tax code or IRC), which is more of a **cash-based accounting approach**. The objective of tax accounting is calculating taxes owed to support government operations.[1]

To illustrate how differences in GAAP and IRS rules affect financial reporting and taxable income, assume that Chelsea Inc. reported revenues of $130,000 and expenses of $60,000 in each of its first three years of operations. **Illustration 18.2** shows the (partial) income statement over these three years.

ILLUSTRATION 18.2 Financial Reporting Income

Chelsea Inc.
GAAP Reporting

	2025	2026	2027	Total
Revenues	$130,000	$130,000	$130,000	
Expenses	60,000	60,000	60,000	
Pretax financial income	$ 70,000	$ 70,000	$ 70,000	$210,000
Income tax expense (20%)	$ 14,000	$ 14,000	$ 14,000	$ 42,000

For tax purposes (following the tax code), Chelsea reported the same expenses to the IRS in each of the years. But, as **Illustration 18.3** shows, Chelsea reported taxable revenues of $100,000 in 2025, $150,000 in 2026, and $140,000 in 2027.

ILLUSTRATION 18.3 Tax Reporting Income

Chelsea Inc.
Tax Reporting

	2025	2026	2027	Total
Revenues	$ 100,000	$150,000	$140,000	
Expenses	60,000	60,000	60,000	
Taxable income	$ 40,000	$ 90,000	$ 80,000	$210,000
Income taxes payable (20%)	$ 8,000	$ 18,000	$ 16,000	$ 42,000

Income tax expense (GAAP reporting) and income taxes payable (tax reporting) differ over the three years but were equal **in total**, as **Illustration 18.4** shows.

ILLUSTRATION 18.4 Comparison of Income Tax Expense to Income Taxes Payable

Chelsea Inc.
Income Tax Expense and Income Taxes Payable

	2025	2026	2027	Total
Income tax expense	$14,000	$14,000	$14,000	$42,000
Income taxes payable	8,000	18,000	16,000	42,000
Difference	$ 6,000	$ (4,000)	$ (2,000)	$ –0–

[1]Determining the amount of tax to pay the IRS is a costly exercise. Individuals and businesses must pay not only the taxes owed but also the costs of their own time spent filing and complying with the tax code. One recent study found that compliance with the federal income tax cost the economy over $360 billion annually. Another study noted that the tax compliance industry employs more people than all the workers at **Walmart**, **UPS**, **McDonald's**, **IBM**, and **Citigroup** combined. One silver lining is that, since enactment of the Tax Cuts and Jobs Act of 2017 (TCJA), taxpayers are spending less time on tax compliance. Let's hope that future tax reforms continue this trend. See A. El-Sibaie, "Tax Compliance Burden Could Cost America as Much as 1.2 Percent of Its GDP," *taxfoundation.org* (February 21, 2018); and D. Brady, "Tax Complexity 2020: Compliance Burdens Ease for Second Year Since Tax Reform," *National Taxpayers Union Foundation* (April 15, 2020).

The differences between income tax expense and income taxes payable in this example arise because:

- For financial reporting, companies use the full accrual method to report revenues. As a result, Chelsea reports **pretax financial income of $70,000 and income tax expense of $14,000 for each of the three years.**
- For tax purposes, a cash basis is generally used to determine taxable income (sometimes referred to as the modified cash-basis approach). This tax basis accounting results in taxable income fluctuating from year to year. For example, in 2025, **taxable income is only $40,000, so Chelsea owes just $8,000 to the IRS that year.** Chelsea classifies the income taxes payable as a current liability on the balance sheet.

What about the difference in income tax expense and income taxes payable? As Illustration 18.4 indicates, for Chelsea the $6,000 ($14,000 − $8,000) difference between income tax expense and income taxes payable in 2025 reflects taxes that it will pay in future periods. This $6,000 difference is often referred to as a **temporary difference**, which results in a deferred tax amount. In this case, it is a deferred tax liability. In cases where taxes will be lower in the future, Chelsea records a deferred tax asset. We explain the measurement and accounting for deferred tax liabilities and assets in the following two sections.

Future Taxable Amounts and Deferred Taxes

The Chelsea example summarized in Illustration 18.4 shows how income taxes payable can differ from income tax expense. This can happen when there are temporary differences between the amounts reported for tax purposes and those reported for book purposes. A **temporary difference** is the difference between the tax basis of an asset or liability and its reported carrying or book value in the GAAP-based financial statements. These differences will result in taxable amounts or deductible amounts in future years.

- A **taxable amount** increases taxable income in future years.
- A **deductible amount** decreases taxable income in future years.

In Chelsea's situation, the only difference between the book basis and tax basis of the assets and liabilities relates to accounts receivable that arose from revenue recognized for book purposes. **Illustration 18.5** indicates that Chelsea reports accounts receivable at $30,000 in the December 31, 2025, GAAP-basis balance sheet. However, the receivables have a zero tax basis.

ILLUSTRATION 18.5 Temporary Difference, Sales Revenue

Per Books	12/31/25	Per Tax Return	12/31/25
Accounts receivable	$30,000	Accounts receivable	$–0–

What will happen to the $30,000 temporary difference that originated in 2025 for Chelsea? Assuming that Chelsea expects to collect $20,000 of the receivables in 2026 and $10,000 in 2027, this collection results in future taxable amounts of $20,000 in 2026 and $10,000 in 2027. These future taxable amounts will cause taxable income to exceed pretax financial income in both 2026 and 2027.

An assumption inherent in a company's GAAP balance sheet is that companies recover and settle the assets and liabilities at their reported amounts (carrying amounts). This assumption creates a requirement under accrual accounting to recognize **currently** the deferred tax consequences of temporary differences. That is, companies recognize the amount of income taxes that are payable (or refundable) when they recover and settle the reported amounts of the assets and liabilities, respectively.

Illustration 18.6 shows the reversal of the temporary difference described in Illustration 18.5 and the resulting taxable amounts in future periods.

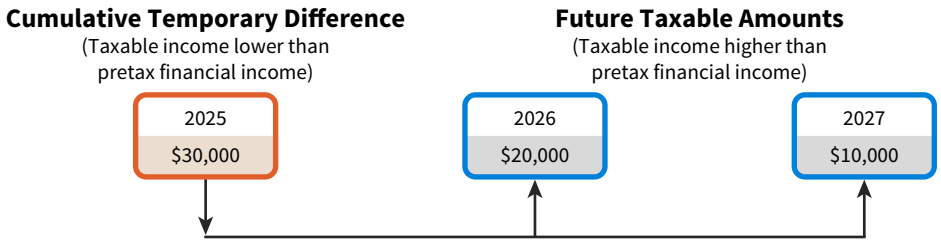


ILLUSTRATION 18.6 Reversal of Temporary Difference, Chelsea Inc.

Chelsea assumes that it will collect the accounts receivable and report the $30,000 collection as taxable revenues in future tax returns. A payment of income tax in both 2026 and 2027 will occur. Chelsea should therefore record in its books in 2025 the deferred tax consequences of the revenue and related receivables reflected in the 2025 financial statements. Chelsea does this by recording a deferred tax liability.

Deferred Tax Liability

A **deferred tax liability** is the deferred tax consequences attributable to taxable temporary differences. In other words, **a deferred tax liability represents the increase in taxes payable in future years as a result of taxable temporary differences existing at the end of the current year**.

Example 18.1 Deferred Tax Liability

FACTS Refer to the Chelsea example in Illustration 18.4. Recall that income taxes payable is $8,000 ($40,000 × .20) in 2025. A temporary difference exists at year-end because Chelsea reports the revenue and related accounts receivable differently for book and tax purposes. The book basis of accounts receivable is $30,000, and the tax basis is zero.

QUESTION What is Chelsea's deferred tax liability at the end of 2025?

SOLUTION

The total deferred tax liability at the end of 2025 is $6,000, computed as follows.

Book basis of accounts receivable	$30,000
Tax basis of accounts receivable	–0–
Cumulative temporary difference at the end of 2025	30,000
Tax rate	20%
Deferred tax liability at the end of 2025	$ 6,000

Companies may also compute the deferred tax liability by preparing a schedule that indicates the future taxable amounts due to existing temporary differences. Such a schedule, as shown in **Illustration 18.7**, is particularly useful when the computations become more complex.

	Future Years		
	2026	**2027**	**Total**
Future taxable amounts	$20,000	$10,000	$30,000
Tax rate	20%	20%	
Deferred tax liability at the end of 2025	$ 4,000	$ 2,000	$ 6,000

ILLUSTRATION 18.7 Schedule of Future Taxable Amounts

Example 18.2
Income Tax Expense with Deferred Tax Liability

FACTS Refer to the information for Chelsea in Example 18.1 (based on Illustration 18.4). Because it is the first year of operations for Chelsea, there is no deferred tax liability at the beginning of the year. Income taxes payable is $8,000 ($40,000 × .20).

QUESTION What is Chelsea's income tax expense for 2025?

SOLUTION

Chelsea computes income tax expense for 2025 as follows.

Current tax expense for 2025 (income taxes payable)		$ 8,000
Deferred tax liability at end of 2025	$6,000	
Deferred tax liability at beginning of 2025	0	
Deferred tax expense (benefit) for 2025		6,000
Income tax expense (total) for 2025		$14,000

Take note of this computation. As indicated, the determination of income tax expense starts with income taxes payable ($8,000) and then adds the increase in the deferred tax liability ($6,000) during the year.

As a result, income tax expense has two components—**current tax expense** (the amount of income taxes payable for the period) and **deferred tax expense**. Deferred tax expense is the change in the deferred tax liability balance from the beginning to the end of the accounting period.

Continuing with Example 18.2, Chelsea records income tax expense in 2025 as follows.

Income Tax Expense	14,000	
Income Taxes Payable		8,000
Deferred Tax Liability		6,000

As indicated, Chelsea credits taxes due and payable to income taxes payable, and credits the increase in deferred taxes to Deferred Tax Liability. Chelsea then debits the sum of those two items to Income Tax Expense.

Let's next look at what happens to Chelsea's deferred tax liability in 2026 and 2027.

Example 18.3
Income Tax Expense—2026

FACTS Continuing the Chelsea example, at the end of 2026 (the second year), the difference between the book basis and the tax basis of the accounts receivable is $10,000 ($30,000 − $20,000). Chelsea multiplies this difference by the applicable tax rate to arrive at the deferred tax liability of $2,000 ($10,000 × .20), which it reports at the end of 2026. Income taxes payable for 2026 is $18,000 ($90,000 × .20).

QUESTIONS (a) What is Chelsea's income tax expense in 2026? (b) What is the journal entry to record income tax expense, income taxes payable, and the change in the deferred tax liability in 2026?

SOLUTION

a. Chelsea's income tax expense for 2026 is calculated as follows.

Current tax expense for 2026 (income taxes payable)		$18,000
Deferred tax liability at end of 2026	$2,000	
Deferred tax liability at beginning of 2026	6,000	
Deferred tax expense (benefit) for 2026		(4,000)
Income tax expense (total) for 2026		$14,000

As indicated, the determination of income tax expense starts with income taxes payable ($18,000) and subtracts the decrease in the deferred tax liability ($4,000) during the year.

b. To record income tax expense, the change in the deferred tax liability, and income taxes payable for 2026:

Income Tax Expense	14,000	
Deferred Tax Liability	4,000	
Income Taxes Payable		18,000

Example 18.4 Income Tax Expense—2027

FACTS Continuing the Chelsea example to the third year, at the end of 2027, the difference between the book basis and the tax basis of the accounts receivable is zero ($30,000 − $20,000 − $10,000). Income taxes payable for 2027 is $16,000 ($80,000 × .20).

QUESTIONS (a) What is Chelsea's income tax expense in 2027? (b) What is the journal entry to record income tax expense, income taxes payable, and the change in the deferred tax liability in 2027?

SOLUTION

a. Chelsea's income tax expense for 2027 is calculated as follows.

Current tax expense for 2027 (income taxes payable)		$16,000
Deferred tax liability at end of 2027	$ 0	
Deferred tax liability at beginning of 2027	2,000	
Deferred tax expense (benefit) for 2027		(2,000)
Income tax expense (total) for 2027		$14,000

As indicated, the determination of income tax expense starts with income taxes payable ($16,000) and then subtracts the decrease in the deferred tax liability ($2,000) during the year.

b. To record the income tax expense, the change in deferred tax liability, and income taxes payable for 2027:

Income Tax Expense	14,000	
Deferred Tax Liability	2,000	
Income Taxes Payable		16,000

Illustration 18.8 shows the Deferred Tax Liability account at the end of 2027.

Deferred Tax Liability

2026	4,000	2025	6,000
2027	2,000		

ILLUSTRATION 18.8 Deferred Tax Liability Account After Reversals

As indicated, the Deferred Tax Liability account has a zero balance at the end of 2027.

Financial Statement Effects

Chelsea reports the information on its balance sheets for 2025–2027 as shown in Illustration 18.9.

Year-End	Income Taxes Payable	Deferred Tax Liability
2025	$ 8,000	$6,000
2026	18,000	2,000
2027	16,000	–0–

ILLUSTRATION 18.9 Balance Sheet Presentation, Deferred Tax Liabilities

Income taxes payable is reported as a current liability, and the deferred tax liability is reported as a noncurrent liability.[2]

On its income statement, Chelsea reports the information as shown in **Illustration 18.10**, from information taken from Illustration 18.2.

ILLUSTRATION 18.10 Income Statement Presentation, Income Tax Expense

	For the Year Ended		
	2025	**2026**	**2027**
Income before income taxes	$70,000	$70,000	$70,000
Income tax expense	14,000	14,000	14,000
Net income	$56,000	$56,000	$56,000

In the income statement or in the notes to the financial statements, a company should disclose the significant components of income tax expense attributable to continuing operations. For example, the presentation for Chelsea in 2025 is as shown in **Illustration 18.11**.

ILLUSTRATION 18.11 Components of Income Tax Expense

Income Statement (partial)

Income before income taxes		$70,000
Income tax expense		
Current	$8,000	
Deferred	6,000	14,000
Net income		$56,000

As illustrated, Chelsea reports both the current portion (amount of income taxes payable for the period) and the deferred portion of income tax expense. Another option is to simply report the total income tax expense on the income statement and then indicate in the notes to the financial statements the current and deferred portions. Income tax expense is often referred to as "Provision for income taxes." Using this terminology, the current provision is $8,000, and the provision for deferred taxes is $6,000.

Accounting Matters

Deferring Tax Payments, Bonus!

As you have learned so far in this chapter, a deferred tax liability is a result of a company **deferring** tax payments to a future period. A large driver of deferred tax liabilities for many companies relates to the timing of depreciation expense. When companies take advantage of accelerated depreciation methods for tax purposes, they are increasing their tax deduction for depreciation expense relative to the straight-line depreciation often used for book purposes. Larger deductions for tax purposes allows companies to defer tax payments to future periods.

Some assets are even eligible for "bonus" depreciation, which allows companies to take a large amount of depreciation the same year the asset is purchased. Why allow this bonus depreciation, which is sometimes as large as 100%? To stimulate growth in the economy! Companies may be incentivized to invest in new fixed assets as part of their tax-planning strategy. As shown in the following table, companies in the utilities and communications business have some of the largest deferred tax liabilities related to depreciation differences, with **AT&T** reporting almost $47 billion of deferred tax payments.

Deferred Tax Liabilities Related to Depreciation and Amortization ($ in millions)

AT&T	$46,952
Comcast	29,829
ExxonMobil	28,778
Verizon Communications	18,009

Note, however, that companies are simply deferring taxes, not avoiding them altogether.

[2]All deferred tax assets and liabilities are classified as noncurrent. [1] (See the FASB Codification References near the end of the chapter.) Expanded discussion of this provision is provided later in the chapter.

Future Deductible Amounts and Deferred Taxes

To illustrate a temporary difference, resulting in a deferred tax asset, assume that during 2025, Cunningham Inc. estimated its warranty costs related to the sale of microwave ovens to be $500,000, paid evenly over the next two years. For book purposes, in 2025 Cunningham reported warranty expense and a related estimated liability for warranties of $500,000 in its financial statements. For tax purposes, **the warranty tax deduction is not allowed until paid**. Therefore, Cunningham recognizes no warranty liability on a tax-basis balance sheet. Illustration 18.12 shows the balance sheet difference at the end of 2025.

Per Books	12/31/25	Per Tax Return	12/31/25
Estimated liability for warranties	$500,000	Estimated liability for warranties	$–0–

ILLUSTRATION 18.12 Temporary Difference, Warranty Liability

When Cunningham pays the warranty liability, it reports an expense (deductible amount) for tax purposes. Because of this temporary difference, Cunningham should recognize in 2025 the tax benefits (positive tax consequences) for the tax deductions that will result from the future settlement of the liability (payments on warranties). Cunningham reports this future tax benefit in the December 31, 2025, balance sheet as a **deferred tax asset**. We can think about this situation another way.

- These **future deductible amounts** cause taxable income to be less than pretax financial income in the future as a result of an existing temporary difference.
- Cunningham's temporary difference originates (arises) in one period (2025) and reverses over two periods (2026 and 2027).

Illustration 18.13 diagrams this situation.

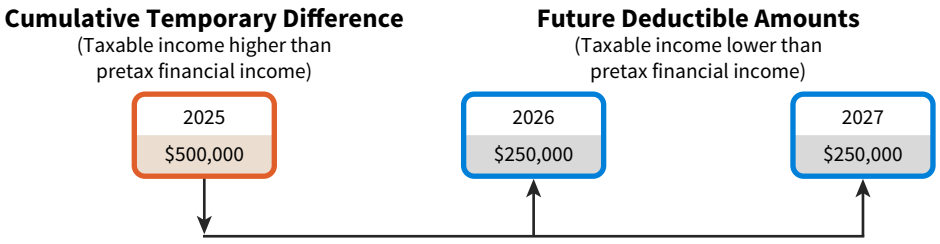


ILLUSTRATION 18.13 Reversal of Temporary Difference, Cunningham Inc.

Deferred Tax Asset

A **deferred tax asset** is the deferred tax consequence attributable to deductible temporary differences. In other words, a **deferred tax asset represents the increase in taxes refundable (or saved) in future years as a result of deductible temporary differences existing at the end of the current year**.

To illustrate the accounting, assume Hunt Company has revenues of $900,000 for both 2025 and 2026. It also has operating expenses of $400,000 for each of these years. In addition, Hunt accrues a loss and related liability of $50,000 for financial reporting purposes because of pending litigation. Hunt cannot deduct this amount for tax purposes until it pays the liability, expected in 2026. As a result, a deductible amount will occur in 2026 when Hunt settles the liability, causing taxable income to be lower than pretax financial income. Illustration 18.14 shows the GAAP and tax reporting over the two years.

ILLUSTRATION 18.14 GAAP and Tax Reporting, Hunt Company

GAAP Reporting

	2025	2026
Revenues	$900,000	$900,000
Expenses (operating)	400,000	400,000
Litigation loss	50,000	–0–
Pretax financial income	$450,000	$500,000
Tax rate	20%	20%
Income tax expense	$ 90,000	$100,000

Tax Reporting

	2025	2026
Revenues	$900,000	$900,000
Expenses (operating)	400,000	400,000
Litigation loss	–0–	50,000
Taxable income	$500,000	$450,000
Tax rate	20%	20%
Income taxes payable	$100,000	$ 90,000

Example 18.5 Deferred Tax Asset

FACTS Refer to the Hunt Company information in Illustration 18.14. A temporary difference exists at year-end because Hunt accounts for a litigation loss differently for book and tax purposes. The book basis of the liability is $50,000, and the tax basis is zero.

QUESTION What is Hunt's deferred tax asset at the end of 2025?

SOLUTION

The total deferred tax asset at the end of 2025 is $10,000, computed as follows.

Book basis of litigation liability	$50,000
Tax basis of litigation liability	–0–
Cumulative temporary difference at the end of 2025	50,000
Tax rate	20%
Deferred tax asset at the end of 2025	$10,000

In this case, Hunt records a deferred tax asset of $10,000 at the end of 2025 because it represents taxes that will be saved in future periods as a result of a deductible temporary difference existing at the end of 2025.

Hunt can also compute the deferred tax asset by preparing a schedule that indicates the future deductible amounts due to deductible temporary differences. **Illustration 18.15** shows this schedule.

ILLUSTRATION 18.15 Schedule of Future Deductible Amounts

	Future Years
Future deductible amounts	$50,000
Tax rate	20%
Deferred tax asset at the end of 2025	$10,000

Example 18.6 Income Tax Expense with Deferred Tax Asset

FACTS Refer to the Hunt Company information in Example 18.5. Because it is the first year of operations for Hunt, there is no deferred tax asset at the beginning of the year. Income taxes payable is $100,000 ($500,000 × .20).

QUESTION What is Hunt's income tax expense for 2025?

SOLUTION

Hunt computes income tax expense for 2025 as follows.

Current tax expense for 2025 (income taxes payable)		$100,000
Deferred tax asset at end of 2025	$10,000	
Deferred tax asset at beginning of 2025	0	
Deferred tax expense (benefit) for 2025		(10,000)
Income tax expense (total) for 2025		$ 90,000

As with the Chelsea examples, the determination of income tax expense starts with income taxes payable ($100,000) and then subtracts the increase in the deferred tax asset ($10,000) during the year.

The **deferred tax benefit** in Example 18.6 results from the increase in the deferred tax asset from the beginning to the end of the accounting period (similar to the Chelsea example earlier).

- The deferred tax benefit is a negative component of income tax expense.
- The total income tax expense of $90,000 on the income statement for 2025 thus consists of two elements—current tax expense of $100,000 and a deferred tax benefit of $10,000.

To record income tax expense, deferred income taxes, and income taxes payable at the end of 2025, Hunt makes the following entry.

Income Tax Expense	90,000	
Deferred Tax Asset	10,000	
Income Taxes Payable		100,000

Let's next look at what happens to Hunt's deferred tax asset in 2026.

Example 18.7 Income Tax Expense—2026

FACTS Continuing the Hunt example, at the end of 2026 (the second year), the difference between the book basis and the tax basis of the litigation liability is zero. Income taxes payable for 2026 is $90,000 ($450,000 × .20).

QUESTIONS (a) What is Hunt's income tax expense in 2026? (b) What is the journal entry to record income tax expense, income taxes payable, and the change in the deferred tax asset in 2026?

SOLUTION

a. Hunt's income tax expense for 2026 is calculated as follows.

Current tax expense for 2026 (income taxes payable)		$ 90,000
Deferred tax asset at end of 2026	$ 0	
Deferred tax asset at beginning of 2026	10,000	
Deferred tax expense (benefit) for 2026		10,000
Income tax expense (total) for 2026		$100,000

As indicated, the determination of income tax expense starts with income taxes payable ($90,000) and then adds the decrease in the deferred tax asset ($10,000) during the year.

b. To record income taxes for 2026:

Income Tax Expense	100,000	
Deferred Tax Asset		10,000
Income Taxes Payable		90,000

Financial Statement Effects

Hunt Company reports the following information on its balance sheets for 2025 and 2026 as shown in Illustration 18.16.

ILLUSTRATION 18.16
Balance Sheet Presentation, Deferred Tax Asset

Year-End	Income Taxes Payable	Deferred Tax Asset
2025	$100,000	$10,000
2026	90,000	–0–

Income taxes payable is reported as a current liability, and the deferred tax asset is reported as a noncurrent asset. On its income statement, Hunt Company reports the information as shown in Illustration 18.17.

ILLUSTRATION 18.17
Income Statement Presentation, Deferred Tax Asset

Hunt Company
Income Statement
For the Year Ending December 31, 2025

Revenues		$900,000
Expenses (operating)		400,000
Litigation loss		50,000
Income before income taxes		450,000
Income tax expense		
Current	$100,000	
Deferred	10,000	90,000
Net income		$360,000

As illustrated, Hunt reports both the current portion (the amount of income taxes payable for the period) and the deferred portion of the income tax expense. In this case, the deferred amount is subtracted from the current portion to arrive at the proper income tax expense.

Illustration 18.18 shows the Deferred Tax Asset account at the end of 2026.

ILLUSTRATION 18.18
Deferred Tax Asset Account After Reversals

Deferred Tax Asset

2025	10,000	2026	10,000

Deferred Tax Asset—Valuation Allowance

Companies recognize a deferred tax asset for all deductible temporary differences. However, as with other assets for which future benefits may not be realized, an allowance might be recorded. For example, an allowance account is established for accounts receivable to anticipate that some accounts receivable will not be collected. Similarly, a company should reduce a deferred tax asset by a **valuation allowance** if, based on available evidence, **it is more likely than not** that it **will not realize** some portion or all of the deferred tax asset. "**More likely than not**" means a level of likelihood of at least slightly more than 50%.

Example 18.8
Deferred Tax Asset—Warranty

FACTS Saris has a deductible temporary difference of $1,000,000 at the end of 2025, related to the lifetime warranty of its products. This is its first year of operations. Its tax rate is 20%. Saris has $900,000 of income taxes payable.

QUESTION What is the journal entry to record income tax expense, income taxes payable, and the deferred tax asset?

SOLUTION

To record income tax expense, the deferred tax asset, and income taxes payable:

Income Tax Expense*	700,000	
Deferred Tax Asset ($1,000,000 × .20)	200,000	
Income Taxes Payable		900,000

*Income Tax Expense = Income Taxes Payable – Increase in Deferred Tax Asset
= $900,000 – $200,000
= $700,000

Saris next evaluates whether a valuation allowance should be recorded, summarized as follows.

- Companies pay tax on income, not on losses. If there is no income, there is no tax.
- If there is no tax, the deferred tax asset cannot be used to offset future taxes owed.
- The deferred tax asset loses its future benefit.

What would cause Saris not to realize the deferred tax asset to offset future taxes owed to the IRS? Suppose Saris predicts it will not have taxable income next year. In other words, Saris is predicting it will show a net taxable loss.

Example 18.9
Valuation Allowance

FACTS Refer to the information in Example 18.8. After careful review of all available evidence, Saris determines that it is more likely than not that it will not realize $80,000 of this deferred tax asset.

QUESTION What is the journal entry (if any) to record a valuation allowance for Saris' deferred tax asset?

SOLUTION

To record the reduction in deferred tax asset value:

Income Tax Expense	80,000	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value		80,000

Allowance to Reduce Deferred Tax Asset to Expected Realizable Value

	2025	80,000

The valuation account used in Example 18.9 is a **contra account**. Saris reports it on the financial statements as shown in **Illustration 18.19**. The presentation is similar to how Allowance for Doubtful Accounts is deducted from Accounts Receivable.

ILLUSTRATION 18.19
Balance Sheet Presentation of Valuation Allowance Account

Deferred tax asset	$200,000
Less: Allowance to reduce deferred tax asset to expected realizable value	80,000
Deferred tax asset (net)	$120,000

Saris then evaluates this allowance account at the end of each accounting period and may determine that the account needs to be increased or decreased. At the end of 2026, assuming the original deferred tax asset is still outstanding Saris determines that it is more likely than not that it will not realize $50,000 of the deferred tax asset. Therefore, Saris makes the following entry to adjust the valuation allowance at 2026.

Allowance to Reduce Deferred Tax Asset to Expected Realizable Value ($80,000 – $50,000)	30,000	
Income Tax Expense		30,000

Allowance to Reduce Deferred Tax Asset to Expected Realizable Value

		2025 Bal.	80,000
2026 Adj.	30,000		
		2026 Bal.	50,000

Note that this adjustment **decreased** income tax expense because Saris changed its estimate. By lowering the allowance, Saris indicates that it expects to realize more of the deferred tax asset

than originally estimated. Saris should consider all available evidence, both positive and negative, to determine whether, based on the weight of available evidence, it needs a valuation allowance. For example, if Saris has been experiencing a series of loss years, it reasonably assumes that these losses will continue. Therefore, Saris will lose the benefit of the future deductible amounts. We discuss the use of a valuation account under other conditions later in the chapter.

Accounting Matters — Deferred Tax Assets

Companies that carry deferred tax assets on their balance sheet must, like any other asset, consider whether they will realize that asset in the future. This is no easy task, especially when changes in tax laws create a moving target. The CARES Act, executed to provide economic relief during the Covid-19 global pandemic, instituted a variety of changes to tax laws that required companies to reevaluate their valuation allowances.

Already a subjective estimate, the valuation allowance for deferred tax assets became even more difficult to estimate. That is, companies estimate whether they will have enough taxable income to realize these assets. For a company like **Citigroup**, which recently reported $36 billion of gross deferred tax assets, its valuation allowance of $5.1 billion was considered a critical audit matter (CAM) by its auditors. Any change in the valuation allowance will have a direct impact on a company's reported net income and EPS.

Put It into Practice LO 18.1
Apply Tax Fundamentals

FACTS Wisco Company has the following information related to taxes in 2025.

1. Deferred tax liability, January 1, 2025, $40,000.
2. Deferred tax asset, January 1, 2025, $0.
3. Taxable income for 2025, $190,000.
4. Pretax financial income for 2025, $400,000.
5. Cumulative temporary difference at December 31, 2025, giving rise to future taxable amounts, $480,000.
6. Cumulative temporary difference at December 31, 2025, giving rise to future deductible amounts, $70,000.
7. Tax rate for all years, 20%.
8. The company is expected to operate profitably in the future.

INSTRUCTIONS

a. Compute income taxes payable for 2025.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025.

c. Prepare the income tax expense section of the income statement for 2025, beginning with the line "Income before income taxes."

d. Wisco examines available evidence and concludes that it is more likely than not that 30% of the deferred tax asset will not be realized. Prepare the journal entry to record an allowance if needed.

SOLUTION

a.

Taxable income	$190,000
Enacted tax rate	20%
Income taxes payable	$38,000

b. First, determine the deferred tax asset and liability and the change in the deferred tax asset and liability in 2025.

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax (Asset)	Deferred Tax Liability
Item (5) above	$480,000	20%		$96,000
Item (6) above	(70,000)	20%	$(14,000)	
Totals	$410,000		$(14,000)	$96,000

Change in deferred taxes:

Deferred tax liability at the end of 2025	$96,000
Deferred tax liability at the beginning of 2025	40,000
Deferred tax expense for 2025 (increase required in deferred tax liability)	$56,000
Deferred tax asset at the end of 2025	$14,000
Deferred tax asset at the beginning of 2025	0
Deferred tax benefit for 2025 (increase required in deferred tax asset)	$(14,000)

Income tax expense:

Current tax expense for 2025 (income taxes payable)		$38,000
Deferred tax expense for 2025 (increase in deferred tax liability)	$56,000	
Deferred tax benefit for 2025 (increase in deferred tax asset)	(14,000)	
Net deferred tax expense for 2025		42,000
Income tax expense for 2025		$80,000

To record income tax expense, deferred income taxes, and income taxes payable for 2025:

Income Tax Expense	80,000	
Deferred Tax Asset	14,000	
Income Taxes Payable		38,000
Deferred Tax Liability		56,000

c.

Income before income taxes		$400,000	
Income tax expense			
Current	$38,000		
Deferred ($56,000 − $14,000)	42,000	80,000	
Net income		$320,000	

Note: The details on the current/deferred tax expense can be disclosed in the notes to the financial statements.

d. To record the allowance:

Income Tax Expense	4,200	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value ($14,000 × .30)		4,200

The allowance account is reported as a contra asset to Deferred Tax Asset.

18.2 Additional Considerations

LEARNING OBJECTIVE 2

Identify additional issues in accounting for income taxes.

Specific Differences

Numerous items create differences between pretax financial income and taxable income. For purposes of accounting recognition, these differences are (1) temporary and (2) permanent.

Temporary Differences

Taxable temporary differences are temporary differences that will result in taxable amounts in future years when the related assets are recovered. **Deductible temporary differences**

are temporary differences that will result in deductible amounts in future years, when the related book liabilities are settled. As discussed earlier, taxable temporary differences give rise to recording deferred tax liabilities. Deductible temporary differences give rise to recording deferred tax assets. **Illustration 18.20** provides examples of temporary differences.

ILLUSTRATION 18.20 Examples of Temporary Differences

Temporary Differences Resulting in Deferred Tax Liabilities (taxable income is **less than** financial income)
Revenues or gains are taxable after they are recognized in financial income that will result in taxable amounts in future years. For example, an asset (e.g., accounts receivable or investment) may be recognized for revenues or gains that will result in taxable amounts in future years when the asset is recovered. Other examples: 1. Sales accounted for on the accrual basis for financial reporting purposes and on the installment (cash) basis for tax purposes. 2. Contracts accounted for under the percentage-of-completion method for financial reporting purposes and a portion of related gross profit deferred for tax purposes. 3. Investments accounted for under the equity method for financial reporting purposes and under the cost method for tax purposes. 4. Gain on involuntary conversion of a nonmonetary asset which is recognized for financial reporting purposes but deferred for tax purposes. 5. Unrealized holding gains for financial reporting purposes (including use of the fair value option), but deferred for tax purposes.
Expenses or losses are deductible before they are recognized in financial income that will result in taxable amounts in future years. The cost of an asset may have been deducted for tax purposes faster than it was expensed for financial reporting purposes. Amounts received upon future recovery of the amount of the asset for financial reporting (through use or sale) will exceed the remaining tax basis of the asset. Other examples: 1. Depreciable property, depletable resources, and intangibles. 2. Deductible pension funding exceeding expense. 3. Prepaid expenses that are deducted on the tax return in the period paid.
Temporary Differences Resulting in Deferred Tax Assets (taxable income is **greater than** financial income)
Revenues or gains are taxable before they are recognized in financial income that will result in deductible amounts in future years. For example, a liability may be recognized for an advance payment for goods or services to be provided in future years. For tax purposes, the advance payment is included in taxable income upon the receipt of cash. Future sacrifices to provide goods or services (or future refunds to those who cancel their orders). Other examples: 1. Subscriptions received in advance. 2. Advance rental receipts. 3. Prepaid contracts and royalties received in advance.
Expenses or losses are deductible after they are recognized in financial income that will result in deductible amounts in future years. For example, a liability (or contra asset) may be recognized as taxable expenses or losses when the liability is settled. Other examples: 1. Product warranty liabilities. 2. Estimated liabilities related to discontinued operations or restructurings. 3. Litigation accruals. 4. Bad debt expense recognized using the allowance method for financial reporting purposes; direct write-off method used for tax purposes. 5. Stock-based compensation expense. 6. Unrealized holding losses for financial reporting purposes (including use of the fair value option) but deferred for tax purposes.

Determining a company's temporary differences may prove difficult. A company should prepare a balance sheet for tax purposes that it can compare with its GAAP balance sheet. Many of the differences between the two balance sheets are temporary differences.

Temporary differences have originating and reversing elements.

- An **originating temporary difference** is the initial difference between the book basis and the tax basis of an asset or liability, regardless of whether the tax basis of the asset or liability exceeds or is exceeded by the book basis of the asset or liability.
- A **reversing difference**, on the other hand, occurs when eliminating a temporary difference that originated in prior periods and then removing the related tax effect from the deferred tax account.

Example 18.10 Originating / Reversing Differences

FACTS Sharp Co. purchases a new piece of equipment in 2023. For book (GAAP) purposes, Sharp uses the straight-line method to depreciate the asset. For tax purposes, Sharp uses an accelerated method that is allowed by the IRS. The following table summarizes the amount of depreciation expense recognized each year for the tax return and on the income statement.

Depreciation Expense	2023	2024	2025	2026	2027	Total
Tax depreciation (tax return)	$11,000	$9,000	$5,000	$3,000	$2,000	$30,000
Book depreciation (income statement)	6,000	6,000	6,000	6,000	6,000	30,000
Temporary difference	5,000	3,000	(1,000)	(3,000)	(4,000)	0
Tax rate	15%	15%	15%	15%	15%	
Tax effect	$ 750	$ 450	$ (150)	$ (450)	$ (600)	$ 0

As indicated, over the 5-year period, total depreciation expense is the same. However, in 2023 and 2024, the expense is greater for tax purposes. In 2025, 2026, and 2027, the expense is less for tax purposes.

QUESTIONS What are the journal entries to record income tax expense in (a) 2023 (an originating difference) and (b) 2027 (a reversing difference)? Assume taxable income before depreciation expense is $80,000 in each year.

SOLUTION

a. To record income tax expense in 2023:

Income Tax Expense ($10,350 + $750)	11,100	
Deferred Tax Liability ($5,000 × .15)		750
Income Taxes Payable [($80,000 − $11,000) × .15)]		10,350

A similar entry (with different amounts, based on the schedule above) is recorded in 2024.

b. To record income tax expense in 2027:

Income Tax Expense ($11,700 − $600)	11,100	
Deferred Tax Liability ($4,000 × .15)	600	
Income Taxes Payable [($80,000 − $2,000) × .15)]		11,700

A similar reversing entry (with different amounts, based on the schedule above) would be made in 2025 and 2026.

As indicated in Example 18.10, Sharp Co. had tax depreciation in excess of book depreciation in 2023 and 2024, but had excess of book depreciation over tax depreciation in 2025, 2026, and 2027 for the same asset. Assuming a tax rate of 15% for all years involved, the Deferred Tax Liability account is as shown in **Illustration 18.21**.

ILLUSTRATION 18.21 Tax Effects of Originating and Reversing Differences

Deferred Tax Liability

Tax effects of reversing differences	2025	150	2023	750	Tax effects of originating differences
	2026	450	2024	450	
	2027	600			
	Bal.	- 0 -			

The originating differences for Sharp in each of the first two years results in increases to the deferred tax liability. The reversing differences in 2025, 2026, and 2027 result in a zero balance in the Deferred Tax Liability account.

Permanent Differences

Some differences between taxable income and pretax financial income are permanent, meaning they affect one but not the other. **Permanent differences** result from items either that:

1. Enter into pretax financial income but **never** into taxable income.
2. Enter into taxable income but **never** into pretax financial income.

Congress has enacted a variety of tax law provisions to attain certain political, economic, and social objectives. Some of these provisions achieve the following.

- **Exclude certain revenues from taxation**. For example, interest earned on state and municipal bonds is not taxable, but it is included as revenue on a company's income statement.
- **Limit the deductibility of certain expenses**. For example, a fine paid for violating a law is not deductible on a tax return, but it is reported as an expense on the income statement.
- **Permit the deduction of certain other expenses in excess of costs incurred**. For example, a company can report a "percentage of depletion" of natural resources on its tax return that is in excess of the actual cost reported in the financial statements.

A corporation that has tax-free income, nondeductible expenses, or allowable deductions in excess of cost has an effective tax rate that differs from its statutory (regular) tax rate. Since permanent differences affect only the period in which they occur, they do not give rise to future taxable or deductible amounts. As a result, **companies recognize no deferred tax consequences**. **Illustration 18.22** shows examples of permanent differences.

ILLUSTRATION 18.22 Examples of Permanent Differences

Items recognized for financial reporting purposes but not for tax purposes:

1. Interest received on state and municipal obligations.
2. Expenses incurred in obtaining tax-exempt income.
3. Proceeds from life insurance carried by the company on key officers or employees.
4. Premiums paid for life insurance carried by the company on key officers or employees (company is beneficiary).
5. Fines and expenses resulting from a violation of law.

Items recognized for tax purposes but not for financial reporting purposes:

1. "Percentage of depletion" of natural resources in excess of their cost.
2. The deduction for dividends received from U S. corporations, generally 70% or 80%.

Examples of Temporary and Permanent Differences

To illustrate the computations used when both temporary and permanent differences exist, assume that Bio-Tech Company reports pretax financial income of $200,000 in each of the years 2023, 2024, and 2025. The company is subject to a 20% tax rate and has the following differences between pretax financial income and taxable income.

1. Bio-Tech reports gross profit of $18,000 from an installment sale in 2023. It recognizes the entire amount for book purposes in 2023. For tax purposes, it will recognize revenue over an 18-month period at a constant amount of $1,000 per month beginning January 1, 2024.
2. It pays life insurance premiums for its key officers of $5,000 in 2024 and 2025. Although not tax-deductible, Bio-Tech expenses the premiums for book purposes.

The installment sale is a temporary difference, whereas the life insurance premium is a permanent difference. **Illustration 18.23** shows the reconciliation of Bio-Tech's pretax financial income to taxable income and the computation of income taxes payable.

ILLUSTRATION 18.23
Reconciliation and Computation of Income Taxes Payable

	2023	2024	2025
Pretax financial income	$200,000	$200,000	$200,000
Permanent difference			
Nondeductible expense		5,000	5,000
Temporary difference			
Installment sale	(18,000)	12,000	6,000
Taxable income	182,000	217,000	211,000
Tax rate	20%	20%	20%
Income taxes payable	$ 36,400	$ 43,400	$ 42,200

Note that:

- In 2023, Bio-Tech **deducts** the installment-sales gross profit ($18,000) from pretax financial income to arrive at taxable income. The reason: Pretax financial income includes the installment-sales gross profit; taxable income does not.
- In 2024 and 2025, Bio-Tech **adds** the $5,000 insurance premium to pretax financial income to arrive at taxable income. The reason: Pretax financial income records an expense for this premium, but for tax purposes the premium is **not** deductible.

Example 18.11 Temporary and Permanent Differences

FACTS Refer to the information in Illustration 18.23 related to Bio-Tech.

QUESTIONS (a) How does the temporary difference impact the future? (b) What are the journal entries at December 31, 2023, 2024, and 2025 to record income tax expense, deferred taxes, and income taxes payable?

SOLUTION

a. In 2023, the originating temporary difference is caused by installment sales of $18,000. The $18,000 is included in financial income but excluded from taxable income. Therefore, taxable income is less than financial income, which creates a future taxable amount and a deferred tax liability. The temporary difference will reverse in 2024 and 2025. (*Note:* There is no deferred tax amount associated with the difference caused by the nondeductible insurance expense because it is a permanent difference.)

b. To record income taxes for 2023, 2024, and 2025:

December 31, 2023		
Income Tax Expense ($36,400 + $3,600)	40,000	
Deferred Tax Liability ($18,000 × .20)		3,600
Income Taxes Payable ($182,000 × .20)		36,400
December 31, 2024		
Income Tax Expense ($43,400 − $2,400)	41,000	
Deferred Tax Liability ($12,000 × .20)	2,400	
Income Taxes Payable ($217,000 × .20)		43,400
December 31, 2025		
Income Tax Expense ($42,200 − $1,200)	41,000	
Deferred Tax Liability ($6,000 × .20)	1,200	
Income Taxes Payable ($211,000 × .20)		42,200

Bio-Tech has one temporary difference, which originates in 2023 and reverses in 2024 and 2025. It recognizes a deferred tax liability at the end of 2023 because the temporary difference causes future taxable amounts. As the temporary difference reverses, Bio-Tech reduces the deferred tax liability to zero.

Deferred Tax Liability

		2023	3,600
2024	2,400		
2025	1,200		
			0

As indicated, Bio-Tech has an enacted tax rate of 20%, which applies for all three years. However, the effective rate differs from the enacted rate in 2024 and 2025. Bio-Tech computes the **effective tax rate** by dividing total income tax expense for the period by pretax financial income. The effective rate for Bio-Tech is as follows.

- **20%** for 2023 ($40,000 ÷ $200,000).
- **20.5%** for 2024 and 2025 ($41,000 ÷ $200,000).

As expected, the effective tax rate for 2024 and 2025 is **higher** than the enacted tax rate of 20% as the life insurance premiums are not deductible for tax purposes.

Tax Rate Considerations

In the Bio-Tech example, the enacted tax rate did not change from one year to the next. Therefore, to compute the deferred income tax amount to report on the balance sheet, a company like Bio-Tech simply multiplies the cumulative temporary difference by the enacted tax rate. But in the "real world," tax rates can change as lawmakers enact new tax legislation.

Future Tax Rates

What happens if tax rates are expected to change in the future? In this case, a company should use the **enacted tax rate** expected to apply when the temporary difference reverses and the tax impact is realized. Therefore, a company must consider presently enacted changes in the tax rate that become effective for a particular future year(s) when determining the tax rate to apply to existing temporary differences. For example, assume that SolarCity, at the end of 2026, has the following cumulative temporary difference of $300,000, computed as shown in **Illustration 18.24**.

ILLUSTRATION 18.24 Computation of Cumulative Temporary Difference

Book basis of depreciable assets	$1,000,000
Tax base of depreciable assets	700,000
Cumulative temporary difference	$ 300,000

Furthermore, assume that the $300,000 will reverse and result in taxable amounts in the future, with the enacted tax rates shown in **Illustration 18.25**. The amount that reverses in each future year should be multiplied by the enacted tax rate for that future year.

ILLUSTRATION 18.25 Deferred Tax Liability Based on Future Rates

	2027	2028	2029	2030	2031	Total
Future taxable amounts	$80,000	$70,000	$60,000	$50,000	$40,000	$300,000
Tax rate	20%	20%	18%	15%	15%	
Deferred tax liability	$ 16,000	$ 14,000	$10,800	$ 7,500	$ 6,000	$ 54,300

The total deferred tax liability to be reported at the end of 2026 is $54,300. SolarCity may only use tax rates other than the current rate when the future tax rates have been **enacted**, as is the case in this example. **If new rates are not yet enacted for future years, SolarCity should use the current rate.**[3]

[3]The TCJA enacted a flat corporate federal tax rate of 21%. The tax rate for an individual company may be higher or lower than 21%, depending on state and international taxes, as well as various provisions in the tax code, which usually reduce the rate. Prior to the TCJA, the IRS and other taxing jurisdictions taxed income on a graduated tax basis. For example, the IRS taxed the first $50,000 of taxable income at 15%, the next $25,000 at 25%, with higher incremental levels of income at rates as high as 39%. As a result, in computing deferred income taxes, companies for which graduated tax rates were a significant factor had to determine and then use the **average tax rate**.

Revision of Future Tax Rates

In most cases, a company will record a deferred tax asset or deferred tax liability at the current tax rate. When a change in the future tax rate is enacted, companies should record its effect on the existing deferred income tax accounts immediately. **A company reports the effect as an adjustment to income tax expense in the period of the change.**

Example 18.12 Change in Future Tax Rates

FACTS On December 10, 2025, a new income tax act is signed into law that lowers the corporate tax rate from 40% to 20%, effective January 1, 2027. If Hostel Co. has one temporary difference at the beginning of 2025 related to $3 million of excess tax depreciation, then it has a Deferred Tax Liability account with a balance of $1,200,000 ($3,000,000 × .40) at January 1, 2025.

QUESTIONS If taxable amounts related to this difference are scheduled to occur equally in 2026, 2027, and 2028, (a) what is Hostel's deferred tax liability at the end of 2025 and (b) what journal entry would you make (if any) for Hostel as a result of the tax rate change?

SOLUTION

a. The deferred tax liability at the end of 2025 is $800,000, computed as follows.

	2026	2027	2028	Total
Future taxable amounts	$1,000,000	$1,000,000	$1,000,000	$3,000,000
Tax rate	40%	20%	20%	
Deferred tax liability	$ 400,000	$ 200,000	$ 200,000	$ 800,000

b. To recognize the decrease of $400,000 ($1,200,000 – $800,000) at the end of 2025 in the deferred tax liability:

Deferred Tax Liability		400,000	
Income Tax Expense			400,000

Deferred Tax Liability

		1/1/25	1,200,000
2025	400,000		
		12/31/25	800,000

Corporate tax rates do not change often. However, state and foreign tax rates change more frequently, and they require adjustments in deferred income taxes accordingly.

Accounting Matters — Lower Tax Rate—Good or Bad?

It may seem counterintuitive that a lower corporate tax rate would have a negative impact on a company's reported earnings, but that is exactly what happens to companies with large deferred tax assets on their balance sheet. When corporate tax rates declined to 21%, down from 35% as a result of the TCJA (2017), **Citigroup** took a $19 billion charge to write-down its deferred tax assets, while **General Motors** took a $7 billion charge. With lower future tax rates, companies will realize lower tax deductions, thereby lowering the reported value of the asset on the balance sheet.

The news is not all bad, especially for companies with deferred tax liabilities. As deferred tax liabilities reverse and generate taxable income, companies will be taxed at a lower rate. **Wells Fargo** reported a gain of $3.9 billion related to the lower tax rate and the impact to its deferred tax liability position. The adjacent table shows the distribution of deferred tax assets and liabilities, by sector, for December year-end firms the year before the TCJS was enacted.

($ in billions)	No. of Firms	Deferred Tax Assets	Deferred Tax Liabilities	DTLs ÷ DTAs
Utilities	28	$ 53.6	$ 232.3	4.3
Telecom services	3	16.7	66.1	4.0
Consumer staples	16	20.1	72.8	3.6
Real estate	32	1.6	4.4	2.8
Healthcare	46	55.0	126.3	2.3
Energy	31	94.4	169.9	1.8
Industrials	55	82 4	147.7	1.8
Consumer discretionary	47	81.1	116.7	1.4
Materials	22	24.8	34.2	1.4
Financials	64	273.4	271.1	1.0
Information technology	28	43.9	32.8	0.7
	372	$747.0	$1,274.2	1.7

You can see that companies in the utilities sector stood to benefit most from a reduction in tax rate. This makes sense given that utility companies invest significantly in fixed assets, often taking advantage of accelerated depreciation for tax purposes, creating deferred tax liabilities. When those depreciation differences reverse and taxable income is higher, the companies will pay taxes at a lower rate! Companies in the financial and technology industry are not so lucky, with a much lower ratio of deferred tax liabilities to assets. As Congress considers future tax rate changes, tax planning is more critical than ever.

Sources: J. Ciesielski, "The Tax Cuts & Jobs Act: What Analysts Need To Know," *The Analyst's Accounting Observer*, Volume 27, No. 2 (February 14, 2018); and M. Rapoport, "Why New Tax Law Cost Citigroup, GM $29 Billion," *Wall Street Journal* (January 17, 2018).

Put It into Practice LO 18.2
Account for Additional Tax Issues

FACTS Johnny Bravo Company began operations in 2025 and has provided the following information.

1. Pretax financial income for 2025 is $100,000.
2. The tax rate enacted for 2025 and future years is 20%.
3. Differences between the 2025 income statement and tax return are listed below.
   a. Warranty expense accrued for financial reporting purposes amounts to $5,000. Warranty deductions per the tax return amount to $2,000.
   b. Gross profit on construction contracts using the percentage-of-completion method for books amounts to $92,000. Gross profit on construction contracts for tax purposes amounts to $62,000.
   c. Depreciation of property, plant, and equipment for financial reporting purposes amounts to $60,000. Depreciation of these assets amounts to $80,000 for the tax return.
   d. A $3,500 fine paid for violation of pollution laws was deducted in computing pretax financial income.
   e. Interest revenue earned on an investment in tax-exempt municipal bonds amounts to $1,400.
4. Taxable income is expected for the next few years.

INSTRUCTIONS

a. Compute taxable income for 2025.

b. Compute the deferred taxes at December 31, 2025, that relate to the temporary differences described above.

c. Prepare the journal entry to record income tax expense, deferred taxes, and income taxes payable for 2025.

SOLUTION

a. Taxable income is computed as follows.

Pretax financial income	$100,000
Permanent differences	
Fine for pollution	3,500
Tax-exempt interest	(1,400)
Originating temporary differences	
Excess warranty expense per books ($5,000 – $2,000)	3,000
Excess construction profits per books ($92,000 – $62,000)	(30,000)
Excess depreciation per tax ($80,000 – $60,000)	(20,000)
Taxable income	$ 55,100

b. Deferred tax assets and deferred tax liabilities:

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax (Asset)	Deferred Tax Liability
Warranty costs	$ (3,000)	20%	$(600)	
Construction contracts	30,000	20		$ 6,000
Depreciation	20,000	20		4,000
Totals	$ 47,000		$(600)	$10,000

c. To record income tax expense, deferred taxes, and income taxes payable:

Income Tax Expense	20,420	
Deferred Tax Asset	600	
Deferred Tax Liability		10,000
Income Taxes Payable ($55,100 × .20)		11,020

Taxable income for 2025 [from part (a)]	$55,100
Tax rate	20%
Income taxes payable for 2025	$11,020
Deferred tax expense / benefit	
Deferred tax liability at the end of 2025 [from part (b)]	$10,000
Deferred tax liability at the beginning of 2025	0
Deferred tax expense for 2025 (increase in deferred tax liability)	$10,000
Deferred tax asset at the end of 2025 [from part (b)]	$ 600
Deferred tax asset at the beginning of 2025	0
Deferred tax benefit for 2025 (decrease in deferred tax asset)	$(600)

Income Tax Expense	=	Income Taxes Payable	+	Increase in Deferred Tax Liability	−	Increase in Deferred Tax Asset
$20,420	=	$11,020	+	$10,000	−	$600

18.3 Accounting for Net Operating Losses

LEARNING OBJECTIVE 3

Explain the accounting for loss carryforwards.

Every management hopes its company will be profitable. But hopes and profits may not materialize. For a start-up company, it is common to accumulate operating losses while expanding its customer base but before realizing economies of scale. For an established company, a major event such as a labor strike, rapidly changing regulatory and competitive forces, a disaster such as a hurricane, or a general economic recession such as that experienced in the global Covid-19 pandemic can cause expenses to exceed revenues and result in a net operating loss.

- A **net operating loss (NOL)** occurs for tax purposes in a year when tax-deductible expenses exceed taxable revenues.
- A company pays no income taxes for a year in which it incurs a NOL.
- In addition, a company may be able to use the losses of one year to offset the profits of future years.

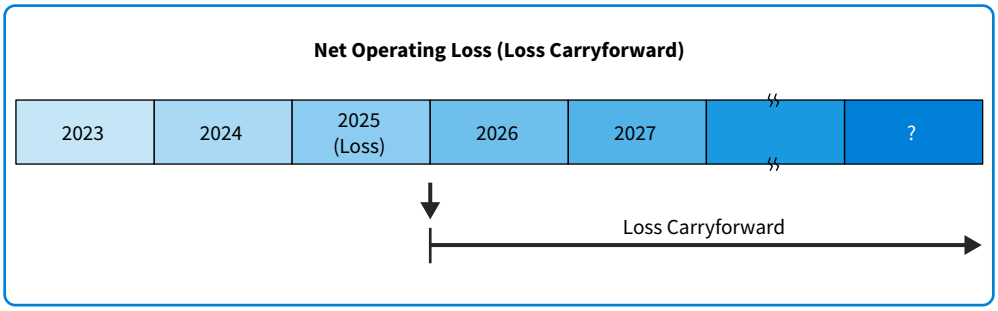
This tax relief is partly designed to help companies through difficult economic times. Indeed, an inequitable tax burden would result if companies were taxed during profitable periods without receiving any tax relief during periods of net operating losses. Under certain circumstances, therefore, the federal tax laws permit taxpayers to use the losses of one year to offset the profits of other years.

Companies accomplish this income-averaging provision through the **carryforward of net operating losses**. Under this provision, a company pays no income taxes for a year in which it incurs a net operating loss, and it can reduce future taxes payable as well.

Loss Carryforward

As indicated when a NOL occurs, a company pays no tax in the year of loss. In addition, through use of a **loss carryforward**, a company may carry the NOL forward indefinitely to offset future taxable income and reduce taxes payable in future years. **Illustration 18.26** shows this approach.

ILLUSTRATION 18.26 Loss Carryforward Procedure



Operating losses can be substantial. For example, **Yahoo!** at one time had net operating losses of approximately $5.4 billion. That amount translates into tax savings of $1.4 billion if Yahoo! is able to generate taxable income in the future.[4]

Loss Carryforward Examples

Because companies use carryforwards to offset future taxable income, the **tax effect of a loss carryforward** represents **future tax savings**. However, realization of a future tax benefit depends on future earnings, an uncertain prospect.

- The key accounting issue is whether there should be different requirements for recognition of a deferred tax asset for (a) deductible temporary differences and (b) operating loss carryforwards.
- The FASB's position is that in substance these items are the same—both are tax-deductible amounts in future years.

As a result, the Board concluded that there **should not be different requirements** for recognition of a deferred tax asset from deductible temporary differences and operating loss carryforwards.[5] As we discussed earlier in the chapter, if a company has a deferred tax asset, it must evaluate whether it needs a related valuation allowance account. If it is more likely than not that a company will **not** realize some or all of the deferred tax asset, then it must establish a valuation allowance account.

Loss Carryforward Without Valuation Allowance

Let's first examine a loss carryforward with no valuation allowance.

[4]The length of carryforward periods has varied, increasing from 7 years to 20 years over a period of time. An indefinite carryforward period was enacted as part of the TCJA. The TCJA also limited the amount that can be carried forward to 80% of taxable income in a future year. Most recently, in an attempt to help companies manage the economic effects of the pandemic, the CARES Act suspended the 80% limitation for 3 years. (*Unless stated otherwise, in homework, assume that the 80% limit does not limit the carryforward.*) Finally, the TCJA also eliminated carryback provisions, which permitted companies to carry back NOLs against prior taxable income and get a tax refund (CARES also reinstated carryback provisions for 3 years). We discuss the accounting for carrybacks in Appendix 18B.

[5]This requirement is controversial because many believe it is inappropriate to recognize deferred tax assets except when assured beyond a reasonable doubt. Others argue that companies should never recognize deferred tax assets for loss carryforwards until realizing the income in the future.

Example 18.13 NOL—No Valuation Allowance

FACTS Groh Inc. has no temporary or permanent differences between its financial and taxable income. Groh experiences a net operating loss of $200,000 in 2025 and takes advantage of the carryforward provision. The enacted future tax rate is 20%.

QUESTIONS (a) What is the future (deferred) tax effect of Groh's net operating loss? (b) What journal entry would you make to record the deferred tax effect in 2025?

SOLUTION

a. In 2025, the tax effect of the $200,000 loss carryforward is a deferred tax asset of $40,000 ($200,000 × .20).

b. To record the benefit of the carryforward in 2025:

Deferred Tax Asset	40,000	
Income Tax Expense (Loss Carryforward)		40,000

There is no Income Taxes Payable account in the journal entry because Groh does not owe any amounts to the IRS in the year of a NOL.

In Example 18.13, the account credited, Income Tax Expense (Loss Carryforward), is a contra income tax expense item, which Groh presents on its 2025 income statement shown in Illustration 18.27.

ILLUSTRATION 18.27
Recognition of the Benefit of the Loss Carryforward in the Loss Year

Groh Inc.
Income Statement (partial) for 2025

Operating loss before income taxes	$(200,000)
Income tax benefit	
Deferred	40,000*
Net loss	$(160,000)

*Carryforward ($200,000 × .20)

The $40,000 is the deferred tax benefit for 2025, which results from an increase in the deferred tax asset. The deferred tax benefit reduces Groh's overall loss from $200,000 to $160,000. Let's look at the accounting in the following year.

Example 18.14 NOL, No Valuation Allowance—2026

FACTS Refer to the Groh information in Example 18.13. Assume that in 2026 Groh returns to profitable operations and has taxable income of $250,000 (prior to adjustment for the NOL carryforward), subject to a 20% tax rate. Groh then realizes the benefits of the carryforward for tax purposes in 2026, which it recognized for accounting purposes in 2025.

QUESTIONS (a) What is Groh's income taxes payable in 2026? (b) What journal entry would you make to record Groh's 2026 income taxes?

SOLUTION

a. Groh computes the income taxes payable for 2026 as follows.

Taxable income prior to loss carryforward	$ 250,000
Loss carryforward deduction	(200,000)
Taxable income for 2026	50,000
Tax rate	20%
Income taxes payable for 2026	$ 10,000

b. To record income taxes in 2026:

Income Tax Expense	50,000	
Deferred Tax Asset		40,000
Income Taxes Payable		10,000

The benefits of the NOL carryforward, realized in 2026, reduce the Deferred Tax Asset account to zero.

The income statement shown in Illustration 18.28 does **not report** the tax effects of the loss carryforward because Groh had reported both previously. The current income tax expense of $10,000 represents what Groh must pay to the IRS for 2026.

ILLUSTRATION 18.28
Presentation of the Benefit of Loss Carryforward Realized in 2026, Recognized in 2025

Groh Inc.
Income Statement (partial) for 2026

Income before income taxes		$250,000
Income tax expense		
Current	$ 10,000	
Deferred	40,000	50,000
Net income		$200,000

Carryforward with Valuation Allowance

Now let's revisit the Groh example assuming that a valuation allowance is needed with the creation of the deferred tax asset.

Example 18.15
NOL with Valuation Allowance—2025

FACTS Refer to the Groh information in Example 18.13. Recall that in 2025, Groh has no temporary or permanent differences. Groh experiences a net operating loss of $200,000 in 2025 and takes advantage of the carryforward provision. The enacted future tax rate is 20%. Assume that it is more likely than not that Groh will **not** realize any of the NOL carryforward in future years.

QUESTION What journal entries would you make to record the deferred tax effects for Groh's 2025 NOL?

SOLUTION

As before, Groh records a deferred tax asset of $40,000 ($200,000 × .20) for the potential benefits related to the loss and an allowance to reduce the deferred tax asset by the same amount. Groh makes the following journal entries in 2025.

To recognize benefit of loss carryforward:

Deferred Tax Asset	40,000	
Income Tax Expense (Loss Carryforward)		40,000

To record allowance amount:

Income Tax Expense (Allowance)	40,000	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value		40,000

The second entry indicates that because it is more likely than not that Groh will not realize the benefit from the deferred tax asset, Groh needs a valuation allowance.

Illustration 18.29 shows Groh's 2025 income statement presentation. Notice that because it is more likely than not that Groh will not realize the benefit from the deferred tax asset, the deferred tax benefit is zero and Groh's net loss remains at $200,000.

ILLUSTRATION 18.29
Recognition of Benefit of Loss Carryforward Only

Groh Inc.
Income Statement (partial) for 2025

Operating loss before income taxes	$(200,000)
Income tax expense	
Deferred	–0–*
Net loss	$(200,000)

*Allowance ($40,000) − Carryforward ($40,000)

Let's see what happens for Groh in the next year if it is profitable.

Example 18.16 NOL, Valuation Allowance—2026

FACTS Refer to the Groh information in Example 18.15. In 2026, Groh has taxable income of $250,000 (before considering the carryforward) subject to a tax rate of 20%. As a result, Groh realizes the deferred tax asset and no longer needs the allowance.

QUESTION What journal entries would you make to record Groh's 2026 income taxes?

SOLUTION

To record current and deferred income taxes (same entry from Example 18.14):

Income Tax Expense	50,000	
Deferred Tax Asset		40,000
Income Taxes Payable		10,000

To eliminate allowance and recognize loss carryforward:

Allowance to Reduce Deferred Tax Asset to Expected Realizable Value	40,000	
Income Tax Expense (Allowance)		40,000

Continuing with Example 18.16, Groh reports the $40,000 benefit related to the loss carryforward on the 2026 income statement. The company did not recognize it in 2025 because it was more likely than not that it would not be realized. Assuming that Groh derives the income for 2026 from continuing operations, it prepares the income statement as shown in **Illustration 18.30**.

ILLUSTRATION 18.30
Recognition of Benefit of Loss Carryforward When Realized

Groh Inc.
Income Statement (partial) for 2026

Income before income taxes		$250,000
Income tax expense		
Current	$ 10,000	
Deferred	–0–*	10,000
Net Income		$240,000

*Loss carryforward ($40,000) — Allowance ($40,000)

Another method is to report only one line for total income tax expense of $10,000 on the face of the income statement and disclose the components of income tax expense in the notes to the financial statements.

Valuation Allowance Revisited

A company should consider all positive and negative information in determining whether it needs a valuation allowance. Whether the company will realize a deferred tax asset depends on whether sufficient taxable income exists or will exist within the carryforward period available under tax law. **Illustration 18.31** shows possible sources of taxable income that may be available under the tax law to realize a tax benefit for deductible temporary differences and carryforwards.

ILLUSTRATION 18.31 Possible Sources of Taxable Income

Taxable Income Sources

a. Future reversals of existing taxable temporary differences.
b. Future taxable income exclusive of reversing temporary differences and carryforwards.
c. Tax-planning strategies that would, if necessary, be implemented to:
(1) Accelerate taxable amounts to utilize expiring carryforwards.
(2) Change the character of taxable or deductible amounts from ordinary income or loss to capital gain or loss.
(3) Switch from tax-exempt to taxable investments. [2]

If any one of these sources is sufficient to support a conclusion that a valuation allowance is unnecessary, a company need not consider other sources.

Forming a conclusion that a valuation allowance is not needed is difficult when there is negative evidence such as cumulative losses in recent years. Companies may also cite positive evidence indicating that a valuation allowance is not needed. **Illustration 18.32** presents examples (not prerequisites) of evidence to consider when determining the need for a valuation allowance.

ILLUSTRATION 18.32 Evidence to Consider in Evaluating the Need for a Valuation Account

Negative Evidence

a. A history of operating loss or tax credit carryforwards expiring unused.
b. Losses expected in early future years (by a presently profitable entity).
c. Unsettled circumstances that, if unfavorably resolved, would adversely affect future operations and profit levels on a continuing basis in future years.
d. A carryforward period that is so brief that it would limit realization of tax benefits if (1) a significant deductible temporary difference is expected to reverse in a single year or (2) the enterprise operates in a traditionally cyclical business.

Positive Evidence

a. Existing contracts or firm sales backlog that will produce more than enough taxable income to realize the deferred tax asset based on existing sale prices and cost structures.
b. An excess appreciated asset value over the tax basis of the entity's in an amount sufficient to realize the deferred tax asset.
c. A strong earnings history exclusive of the loss that created the future deductible amount (tax loss carryforward or deductible temporary difference) coupled with evidence indicating that the loss is an aberration rather than a continuing condition (for example, the result of an unusual or infrequent item, or both). [3]

Global View

Under IFRS (*IAS 12*), a company may not recognize a deferred tax asset unless realization is "probable." However, "probable" is not defined in the standard, leading to diversity in the recognition of deferred tax assets. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

The use of a valuation allowance provides a company with an opportunity to manage its earnings. As one accounting expert notes, "The 'more likely than not' provision is perhaps the most judgmental clause in accounting." Some companies may set up a valuation account and then use it to increase income as needed. Others may take the income immediately to increase equity or to offset large negative charges to income (see **Global View**).

Accounting Matters — NOLs: Good News or Bad?

Here are some net operating loss numbers reported by several notable companies (dollars in millions).

Company	Income (Loss)	Operating Loss Carryforward	Tax Deferred (Tax Asset)
Delta Air Lines	$(12,385.0)	$5,700.0	$1,495.0
Goodyear	(1,250.0)	1,570.0	704.0
Kodak	(541.0)	2,068.0	480.0
General Mills	2,181.2	155.6	146.6

All of these companies are using the carryforward provisions of the tax code for their NOLs. For many of them, the NOL is an amount far exceeding their reported profits. (Carryforwards can be claimed indefinitely into the future.) In some cases, management expects the tax rates in the future to be higher. This difference in expected rates provides a bigger tax benefit if the losses are carried forward and matched against future income.

Is there a downside? To realize the benefits of carryforwards, a company must have future taxable income to claim the NOL deductions. As we learned, if it is more likely than not that a company will not have taxable income, it must record a valuation allowance (and increased tax expense). As the data in the adjacent table indicate, recording a valuation allowance to reflect the uncertainty of realizing the tax benefits has merit.

A classic example is **Sony Corp.**, which announced a $3.2 billion net loss, blaming a $4.4 billion write-off on a certain portion of deferred tax assets in Japan. The write-off was an admission that an earthquake and tsunami shattered its expectations for a robust current fiscal year. Sony faced uncertainties because its recovery prospects were partially dependent on parts and materials suppliers, many of which were also affected by the quake. As a result, Sony had to record an allowance of ¥360 billion on certain deferred tax assets due to uncertainty about future taxable income.

We observed a similar experience in the wake of the global Covid-19 pandemic, with major global companies reporting significant declines in operating profits as the crisis unfolded. These results create extreme uncertainty as to future profitability, leading to expected increases in allowances established against deferred tax assets.

Sources: Company annual reports (2020); J. Osawa, "Sony Expects Hefty Loss: Electronics Giant Reverses Prediction for Full-Year Profit, Blaming Earthquake," *Wall Street Journal* (May 24, 2011); and Deloitte, "How Covid-19 Infects Financial Reporting and Results Presentations," *Perspectives* (Quarter 1, 2020).

Put It into Practice LO 18.3
Record Loss Carryforward

FACTS Richardson Inc. reported the following pretax financial income (loss) for the years 2025–2027.

2025	$240,000
2026	(180,000)
2027	380,000

Pretax financial income (loss) and taxable income (loss) were the same for all years involved. The enacted tax rate was 20% for 2025 and 25% in 2026–2027.

INSTRUCTIONS

a. Prepare the journal entries for the years 2025–2027 to record income tax expense, income taxes payable, and the tax effects of the loss carryforward. Assume that based on the weight of available evidence, it is more likely than not that 40% of the benefits of the loss carryforward will **not** be realized.

b. Prepare the income tax section of the 2026 income statement beginning with the line "Income (loss) before income taxes."

SOLUTION

a.

2025

Income Tax Expense ($240,000 × .20)	48,000	
Income Taxes Payable		48,000

	2026		
	Deferred Tax Asset ($180,000 × .25)	45,000	
	Income Tax Expense (Carryforward)		45,000
	Income Tax Expense (Carryforward)	18,000	
	Allowance to Reduce Deferred Tax Assetto Expected Realizable Value (.40 × $45,000)		18,000
	2027		
	Income Tax Expense ($380,000 × .25)	95,000	
	Income Taxes Payable [($380,000 – $180,000) × .25]		50,000
	Deferred Tax Asset		45,000
	Allowance to Reduce Deferred Tax Asset to Expected Realizable Value	18,000	
	Income Tax Expense (Allowance)		18,000

b.	Loss before income taxes	$(180,000)
	Income tax benefit	
	Deferred	27,000*
	Net loss	$(153,000)

*Deferred tax asset = Carryforward ($45,000) − Allowance $18,000)

18.4 Financial Statement Presentation

LEARNING OBJECTIVE 4

Describe the presentation of deferred income taxes in financial statements.

Balance Sheet

On the balance sheet:

- Companies report income taxes payable and income tax refund receivable as a current liability and current asset, respectively.
- Companies often make estimated payments to taxing authorities quarterly; these payments are reported as prepaid income taxes in the current assets section.
- Companies are generally permitted to offset any balances in income taxes payable against related income tax refund receivable or prepaid income taxes balances.

Deferred tax accounts are also reported as assets and liabilities. Companies should classify deferred tax accounts as a net noncurrent amount on the balance sheet. That is, deferred tax assets and deferred tax liabilities are separately recognized and measured and then offset on the balance sheet, reported in the noncurrent section of the balance sheet.

Example 18.17 Classification

FACTS Yelich Company has four deferred tax items at December 31, 2025, as shown in the following table.

Temporary Difference	Deferred Tax Asset	Deferred Tax Liability
1. Rent collected in advance: recognized when a performance obligation is satisfied for accounting purposes and when received for tax purposes.	$(42,000)	
2. Use of straight-line depreciation for accounting purposes and accelerated depreciation for tax purposes.		$214,000
3. Recognition of income on installment sales at the time of sale for accounting purposes and during period of collection for tax purposes.		45,000
4. Warranty liabilities: recognized at time of sale for accounting purposes and at time paid for tax purposes.	(12,000)	
Totals	(54,000)	259,000
Net deferred tax liability		$205,000

QUESTION How should Yelich report deferred taxes in its balance sheet?

SOLUTION

Yelich Company has total deferred tax assets of $54,000 and total deferred tax liabilities of $259,000. Yelich therefore reports a deferred tax liability of $205,000 ($259,000 − $54,000) in the noncurrent liability section of the balance sheet.

Some disagree with the use of the noncurrent section for classification of deferred taxes on the balance sheet. That is, the classification should be based on when the temporary difference reverses. For example, a temporary difference that reverses in the next period should be classified as current rather than noncurrent. While the FASB recognizes that classifying all deferred tax items as noncurrent is conceptually deficient, it notes the following.

- Determining when a temporary difference reverses is often difficult (such as with a loss carryforward).
- Scheduling of the reversals to determine current versus noncurrent is complex and costly, and provides limited usefulness to the financial statement reader.

As a result, as part of an overall simplification initiative, the Board decided to classify all deferred taxes as noncurrent.

Note Disclosure

Companies are required to disclose the total of all deferred tax liabilities, the total of all deferred assets, and the total valuation allowance in the notes to the financial statements. In addition, companies should disclose:

1. Any change during the year in the total valuation allowance.
2. The types of temporary differences or carryforwards that give rise to significant portions of deferred tax liabilities and assets.

For example, **PepsiCo** reported the information shown in **Illustration 18.33** related to its deferred tax assets, deferred tax liabilities, and valuation allowance account.

ILLUSTRATION 18.33 PepsiCo Tax Note

PepsiCo
(in millions)

Deferred tax liabilities and assets are comprised of the following:

	2020	2019
Deferred tax liabilities		
Debt guarantee of wholly-owned subsidiary	$ 578	$ 578
Property, plant and equipment	1,851	1,583
Recapture of net operating losses	504	335
Right-of-use assets	371	345
Other	159	167
Gross deferred tax liabilities	3,463	3,008
Deferred tax assets		
Net carryforwards	5,008	4,168
Intangible assets other than nondeductible goodwill	1,146	793
Share-based compensation	90	94
Retiree medical benefits	153	154
Other employee-related benefits	373	350
Pension benefits	80	104
Deductible state tax and interest benefits	150	126
Lease liabilities	371	345
Other	866	741
Gross deferred tax assets	8,237	6,875
Valuation allowances	(4,686)	(3,599)
Deferred tax assets, net	3,551	3,276
Net deferred tax assets (assets greater than liabilities)	$ (88)	$ (268)

A summary of our valuation allowance activity is as follows:

	2020	2019
Balance, beginning of year	$ 3,599	$ 3,753
Provision	1,082	(124)
Other additions/(deductions)	5	(30)
Balance, end of year	$ 4,686	$ 3,599

The disclosure of gross deferred tax assets, deferred tax liabilities, and changes in the valuation allowance helps users make better predictions of future cash flows. Examination of the deferred portion of income tax expense provides information as to whether taxes payable are likely to be higher or lower in the future.

In PepsiCo's case, analysts expect future taxable amounts and higher tax payments, primarily from lower depreciation in the future. PepsiCo expects future deductible amounts and lower tax payments due to deductions for carryforwards, intangible assets, and employee benefits. These deferred tax items indicate that actual tax payments for PepsiCo will be higher than the tax expense reported on the income statement in the future.[7]

Income Statement

Companies are required to report income before income taxes and income tax expense on the income statement. **Illustration 18.34** shows the amounts that PepsiCo reported related to tax expense.

[7]See R. P. Weber and J. E. Wheeler, "Using Income Tax Disclosures to Explore Significant Economic Transactions," *Accounting Horizons* (September 1992), for a discussion of how analysts use deferred tax disclosures to assess the quality of earnings and to predict future cash flows.

PepsiCo
(in millions)

	2020	2019	2018
Income before income taxes	$9,069	$9,312	$9,189
Provision for income taxes	1,894	1,959	(3,370)
Net income	$7,175	$7,353	$12,559

ILLUSTRATION 18.34 Tax Expense Disclosures

Income tax expense (or benefit) generally equals the sum of income taxes payable (or refundable) and the change in the deferred tax expense or benefit. As discussed earlier, the following formula is used to compute income tax expense (benefit).

Income Taxes Payable or Refundable ± **Change in Deferred Income Taxes** = **Total Income Tax Expense or Benefit**

The total deferred tax expense (or benefit) equals the sum of the changes in the deferred tax assets, deferred tax liabilities, and the valuation allowance for the year. For example, a company adds an increase in a deferred tax liability to income taxes payable. On the other hand, it subtracts an increase in a deferred tax asset from income taxes payable.

PepsiCo provided the disclosure shown in **Illustration 18.35** in the notes to the financial statements providing additional explanation related to income before income taxes and deferred income taxes.

PepsiCo
(in millions)

The components of income before income taxes are as follows:

	2020	2019	2018
U.S.	$4,070	$4,123	$3,864
Foreign	4,999	5,189	5,325
	$9,069	$9,312	$9,189

The provision for (benefit from) income taxes consisted of the following:

		2020	2019	2018
Current:	U.S. Federal	$ 715	$ 652	$ 437
	Foreign	932	807	378
	State	110	196	63
		1,757	1,655	878
Deferred:	U.S. Federal	273	325	140
	Foreign	(167)	(31)	(4,379)
	State	31	10	(9)
		137	304	(4,248)
Provision (benefit) (see Illustration 18.34)		$1,894	$1,959	$(3,370)

ILLUSTRATION 18.35 Components of Income Tax Expense

Although companies generally report only the change in the deferred portion on the income statement, it is important to recognize that the change can involve many of the following items.

1. Current tax expense or benefit.
2. Deferred tax expense or benefit, exclusive of other components listed below.

3. Government grants (if recognized as a reduction of income tax expense).
4. The benefits of operating loss carryforwards (resulting in a reduction of income tax expense).
5. Adjustments of a deferred tax liability or asset for enacted changes in tax laws or rates or a change in the tax status of a company.
6. Adjustments of the beginning-of-the-year balance of a valuation allowance because of a change in circumstances that causes a change in judgment about the realizability of the related deferred tax asset in future years.

In the notes, companies must also reconcile (using percentages or dollar amounts) income tax expense attributable to continuing operations with the amount that results from applying domestic or federal statutory tax rates to pretax income from continuing operations. Companies should disclose the estimated amount and the nature of significant reconciling items. **Illustration 18.36** presents an example from the annual report of PepsiCo.

ILLUSTRATION 18.36 Tax Rate Reconciliation

PepsiCo

A reconciliation of the U.S. Federal statutory tax rate to our annual tax rate is as follows:

	2020	2019	2018
U.S. Federal statutory tax rate	21.0%	21.0%	21.0%
State income tax, net of U.S. Federal tax benefit	1.2	1.6	0.5
Lower taxes on foreign results	(0.8)	(0.9)	(2.2)
One-time mandatory transition tax—TCJ Act	—	(0.1)	0.1
Remeasurement of deferred taxes—TCJ Act	—	—	(0.4)
International reorganizations	—		(47.3)
Tax settlements	—	—	(7.8)
Other, net	(0.5)	(0.6)	(0.6)
Annual tax rate	20.9%	21.0%	(36.7)%

This disclosure helps users assess the quality of earnings. Many investors seeking to assess the quality of a company's earnings are interested in the reconciliation of pretax financial income to taxable income. Analysts carefully examine earnings that are enhanced by a favorable tax effect, particularly if the tax effect is non-recurring.

For example, the tax rate reconciliation schedule indicates that PepsiCo's effective tax rate is actually negative in 2018. The reason for this difference is primarily due to one-time adjustments for the recent enactment of the TCJA (remeasuring deferred taxes and taxes on foreign earnings). In prior years, PepsiCo's tax rate was lower than the statutory rate. In 2019 and 2020, there is little or no difference in PepsiCo's effective tax rate and the statutory rate.

Companies should also disclose the nature of their tax loss carryforward. PepsiCo, for example, provides the information shown in **Illustration 18.37**.

ILLUSTRATION 18.37 Disclosure of Carryforwards and Allowances

PepsiCo

Carryforwards and Allowances

Operating loss carryforwards totaling $28.3 billion as of December 26, 2020 are being carried forward in a number of foreign and state jurisdictions where we are permitted to use tax operating losses from prior periods to reduce future taxable income. These operating losses will expire as follows: $0.2 billion in 2021, $25.2 billion between 2022 and 2040 and $2.9 billion may be carried forward indefinitely. We establish valuation allowances for our deferred tax assets if, based on the available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

This disclosure helps users predict future cash flows for operating loss carryforwards. From this disclosure, analysts determine the amount of income that the company may recognize in the future on which it will pay no income tax. For example, the PepsiCo disclosure in Illustration 18.37 indicates that PepsiCo has $28.3 billion in net operating loss carryforwards that it can use to reduce future taxes. However, the valuation allowance indicates that $4,686 million (see Illustration 18.33) of deferred tax assets may not be realized in the future.

Loss carryforwards can be valuable to a potential acquirer. For example, as mentioned earlier, **Yahoo!** has a substantial net operating loss carryforward. A potential acquirer would find Yahoo! more valuable as a result of these carryforwards. That is, the acquirer may be able to use these carryforwards to shield future income. However, the acquiring company has to be careful because the structure of the deal may lead to a situation where the deductions will be severely limited.

A similar issue arises in companies emerging from bankruptcy.

- In many cases, these companies have large NOLs but the value of the losses may be limited.
- This is because any gains related to the cancellation of liabilities in bankruptcy must be offset against the NOLs.

For example, when **Kmart** emerged from bankruptcy, it disclosed NOL carryforwards approximating $3.8 billion. At the same time, Kmart disclosed cancellation of debt gains that reduced the value of the NOL carryforward. These reductions soured the merger between Kmart and **Sears Roebuck** because the cancellation of the indebtedness gains reduced the value of the Kmart carryforwards to the merged company by $3.74 billion.[8]

Accounting Matters — Uncertain Tax Positions

Every company takes tax positions, from taking a tax deduction or credit, to filing a tax return in a certain jurisdiction. Some tax positions are clear-cut, while others may be the result of more aggressive or risky tax-planning strategies. **Uncertain tax positions** give rise to tax benefits either by reducing income tax expense or related payables, or by increasing an income tax refund receivable or deferred tax asset. When companies take these riskier tax positions, there is inherently some risk that the taxing authority will "disagree" with the company's position. If audited by the taxing authority, some companies may have to amend their initial position and lose some of the tax benefit they initially claimed.

To provide more consistency and insight into tax positions, companies must evaluate each tax position on its technical merit and determine the likelihood that the position will pass muster with the tax authority. Companies can only recognize a benefit on their GAAP-based financial statements if, in management's opinion, there is a greater than 50% chance of the benefit being realized upon audit by the taxing authority.

Now, companies have already taken the tax position for tax purposes, so what do they do with a difference between the benefit recognized for tax purposes and the amount allowed for financial statement purposes? If the recognition threshold is passed, companies must then recognize an adjustment to their tax assets/liabilities and usually an increase to income tax expense. (This estimation process is complex and is beyond the scope of this text.) **[4]**

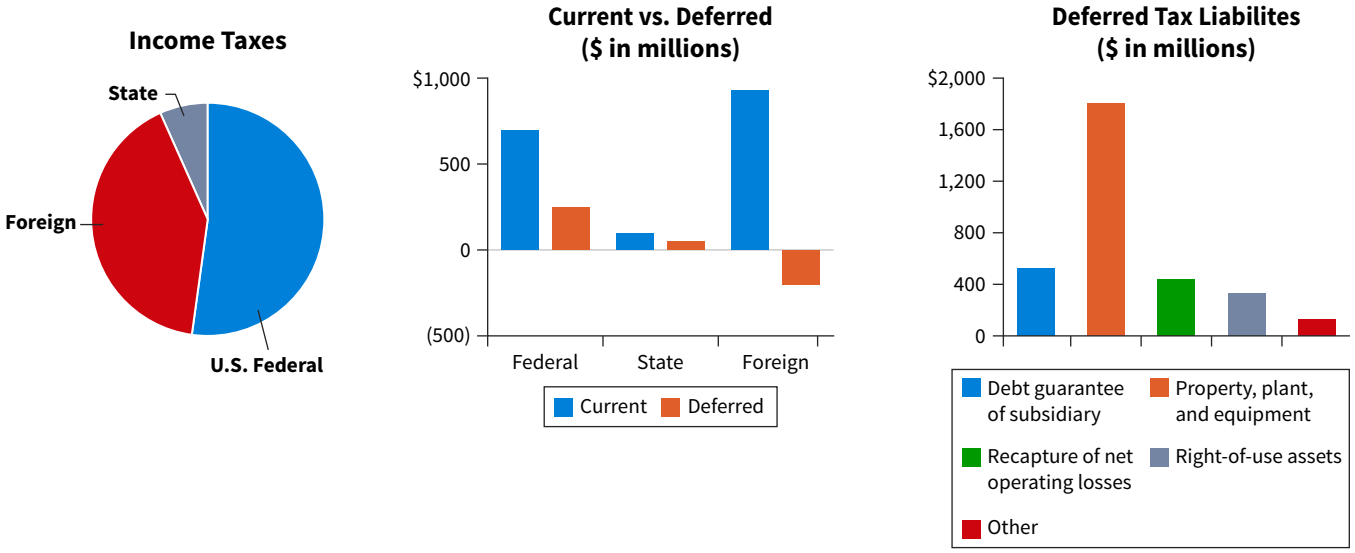
For example, say a company took advantage of a credit on its tax return that reduced its tax liability by $100. As a result of the assessment process, it concludes that only $75 of that benefit can be recognized for financial statement purposes. The difference of $25 is recorded as an unrecognized tax benefit on its balance sheet. In **Apple**'s case, the amount of its unrecognized tax benefit is $16.5 billion! This means that Apple took tax positions (and their related benefits) worth $16.5 billion for which it deems there is a less than 50% chance of being upheld by taxing authorities in the event of an audit.

Apple is not alone in the significance of its unrecognized benefits. This is definitely a footnote disclosure worthy of reviewing to gain insights into a company's tax strategies.

[8]The IRS frowns on acquisitions done solely to obtain operating loss carryforwards. If it determines that the merger is solely tax-motivated, the IRS disallows the deductions. But because it is very difficult to determine whether a merger is or is not tax-motivated, the "purchase of operating loss carryforwards" continues.

Analytics in Action: Visualizing Taxes?

As with many other business functions, using large data sets and technology like data visualization tools can help tax professionals make better decisions and improve overall business performance. Emerging technologies allow companies to, literally, see data in new dynamic ways, learn from past results, and better predict future outcomes. The charts below show some components of **PepsiCo**'s tax expense.



With these visualizations, management can drill into the transactional data behind these figures and gain better insights about the overall tax position of the company. Better than looking at lines on a financial statement or tax return? We think so!

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

A Summary of the Asset-Liability Method

The FASB believes that the **asset-liability method**, which this chapter has covered, is the most consistent method for accounting for income taxes.

- One objective of this approach is to recognize the amount of taxes payable or refundable for the current year.
- A second objective is to recognize **deferred tax liabilities and assets** for the **future tax consequences** of events that have been recognized in the financial statements or tax returns.

To implement the objectives, companies apply some basic principles in accounting for income taxes at the date of the financial statements, as listed in **Illustration 18.38**. **[5]**

ILLUSTRATION 18.38 Basic Principles of the Asset-Liability Method

Basic Principles

a. A current tax liability or asset is recognized for the estimated taxes payable or refundable on the tax return for the current year.

b. A deferred tax liability or asset is recognized for the estimated future tax effects attributable to temporary differences and carryforwards.

c. The measurement of current and deferred tax liabilities and assets is based on provisions of the enacted tax law; the effects of future changes in tax laws or rates are not anticipated.

d. The measurement of deferred tax assets is reduced, if necessary, by the amount of any tax benefits that, based on available evidence, are not expected to be realized.

Illustration 18.39 diagrams the procedures for implementing the asset-liability method.

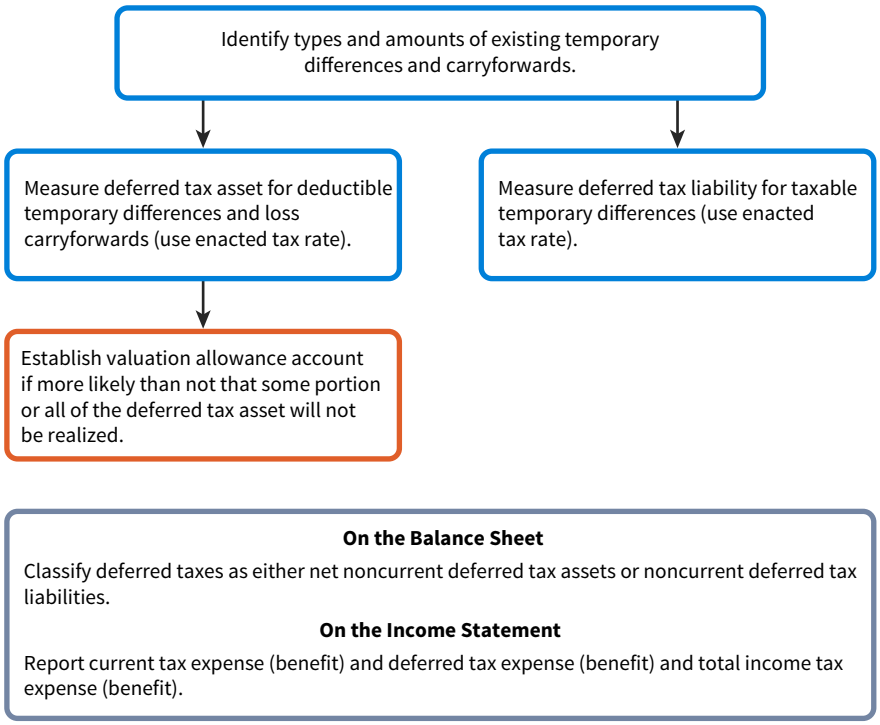

Identify types and amounts of existing temporary differences and carryforwards.
Measure deferred tax asset for deductible temporary differences and loss carryforwards (use enacted tax rate).
Measure deferred tax liability for taxable temporary differences (use enacted tax rate).
Establish valuation allowance account if more likely than not that some portion or all of the deferred tax asset will not be realized.
On the Balance Sheet
Classify deferred taxes as either net noncurrent deferred tax assets or noncurrent deferred tax liabilities.
On the Income Statement
Report current tax expense (benefit) and deferred tax expense (benefit) and total income tax expense (benefit).

ILLUSTRATION 18.39 Procedures for Computing and Reporting Deferred Income Taxes

As an aid to understanding deferred income taxes, we provide the following glossary.

Key Deferred Income Tax Terms

Carryforwards. Deductions or credits that cannot be utilized on the tax return during a year and that may be carried forward to reduce taxable income or taxes payable in a future year. An **operating loss carryforward** is an excess of tax deductions over gross income in a year. A **tax credit carryforward** is the amount by which tax credits available for utilization exceed statutory limitations.

Current tax expense (benefit). The amount of income taxes paid or payable (or refundable) for a year as determined by applying the provisions of the enacted tax law to the taxable income or excess of deductions over revenues for that year.

Deductible temporary difference. Temporary differences that result in deductible amounts in future years when recovering or settling the related asset or liability, respectively.

Deferred tax asset. The deferred tax consequences attributable to deductible temporary differences and carryforwards.

Deferred tax consequences. The future effects on income taxes as measured by the enacted tax rate and provisions of the enacted tax law resulting from temporary differences and carryforwards at the end of the current year.

Deferred tax expense (benefit). The change during the year in a company's deferred tax liabilities and assets.

Deferred tax liability. The deferred tax consequences attributable to taxable temporary differences.

Financial income. Income before taxes reported on the GAAP income statement.

Income taxes. Domestic and foreign federal (national), state, and local (including franchise) taxes based on income.

Income taxes currently payable (refundable). Refer to current tax expense (benefit).

Income tax expense (benefit). The sum of current tax expense (benefit) and deferred tax expense (benefit).

Taxable income. The excess of taxable revenues over tax-deductible expenses and exemptions for the year as defined by the governmental taxing authority.

Taxable temporary difference. Temporary differences that result in taxable amounts in future years when recovering or settling the related asset or liability, respectively.

Tax-planning strategy. An action that meets certain criteria and that a company implements to realize a tax benefit for an operating loss or tax credit carryforward. Companies consider tax-planning strategies when assessing the need for and amount of a valuation allowance for deferred tax assets.

Temporary difference. A difference between the tax basis of an asset or liability and its reported amount in the financial statements that will result in taxable or deductible amounts in future years when recovering or settling the reported amount of the asset or liability, respectively.

Valuation allowance. The portion of a deferred tax asset for which it is more likely than not that a company will not realize a tax benefit.

APPENDIX 18A Comprehensive Example of Interperiod Tax Allocation

LEARNING OBJECTIVE *5

Apply the concepts and procedures of interperiod tax allocation.

This appendix presents a comprehensive illustration of a deferred income tax problem with several temporary and permanent differences. The example follows one company through two complete years (2024 and 2025). **Study it carefully.** It should help you understand the concepts and procedures presented in the chapter.

First Year—2024

Allman Company, which began operations at the beginning of 2024, produces various products on a contract basis. Each contract generates a gross profit of $80,000. Some of Allman's contracts provide for the customer to pay on an installment basis. Under these contracts, Allman collects one-fifth of the contract revenue evenly over the current year and in each of the following four years. For financial reporting purposes, the company recognizes gross profit in the year of completion (accrual basis); for tax purposes, Allman recognizes gross profit in the year cash is collected (installment basis).

Presented below is information related to Allman's operations for 2024.

1. In 2024, the company completed seven contracts that allow for the customer to pay on an installment basis. Allman recognized the related gross profit of $560,000 for financial reporting purposes. It reported only $112,000 of gross profit on installment sales on the 2024 tax return. The company expects future collections on the related installment receivables to result in taxable amounts of $112,000 in each of the next four years.
2. At the beginning of 2024, Allman Company purchased depreciable assets with a cost of $540,000. For financial reporting purposes, Allman depreciates these assets using the straight-line method over a six-year service life. For tax purposes, the assets fall in the five-year recovery class, and Allman uses the MACRS system. The depreciation schedules for both financial reporting and tax purposes are as follows.

Year	Depreciation for Financial Reporting Purposes	Depreciation for Tax Purposes	Difference
2024	$ 90,000	$108,000	$(18,000)
2025	90,000	172,800	(82,800)
2026	90,000	103,680	(13,680)
2027	90,000	62,208	27,792
2028	90,000	62,208	27,792
2029	90,000	31,104	58,896
	$540,000	$540,000	$ –0–

3. The company warrants its product for two years from the date of completion of a contract. During 2024, the product warranty liability accrued for financial reporting purposes was $200,000, and the amount paid for the satisfaction of warranty liability was $44,000. Allman expects to settle the remaining $156,000 by expenditures of $56,000 in 2025 and $100,000 in 2026.
4. In 2024, nontaxable municipal bond interest revenue was $28,000.
5. During 2024, nondeductible fines and penalties of $26,000 were paid.
6. Pretax financial income for 2024 amounts to $412,000.
7. Tax rates enacted before the end of 2024 were:

2024	30%
2025 and later years	20%

8. The accounting period is the calendar year.
9. The company is expected to have taxable income in all future years.

Taxable Income and Income Taxes Payable—2024

The first step is to determine Allman Company's income taxes payable for 2024 by calculating its taxable income. **Illustration 18A.1** shows this computation.

ILLUSTRATION 18A.1 Computation of Taxable Income, 2024

Pretax financial income for 2024	$412,000
Permanent differences:	
Nontaxable revenue-municipal bond interest	(28,000)
Nondeductible expenses—fines and penalties	26,000
Temporary differences:	
Excess gross profit per books ($560,000 – $112,000)	(448,000)
Excess depreciation per tax ($108,000 – $90,000)	(18,000)
Excess warranty expense per books ($200,000 – $44,000)	156,000
Taxable income for 2024	$100,000

Allman computes income taxes payable on taxable income for $100,000 as shown in **Illustration 18A.2**.

ILLUSTRATION 18A.2 Computation of Income Taxes Payable, End of 2024

Taxable income for 2024	$100,000
Tax rate	30%
Income taxes payable (current tax expense) for 2024	$ 30,000

Computing Deferred Income Taxes—End of 2024

The schedule in **Illustration 18A.3** summarizes the temporary differences and the resulting future taxable and deductible amounts.

ILLUSTRATION 18A.3 Schedule of Future Taxable and Deductible Amounts, End of 2024

	Future Years					
	2025	**2026**	**2027**	**2028**	**2029**	**Total**
Future taxable (deductible) amounts:						
Installment sales	$112,000	$112,000	$112,000	$112,000		$448,000
Depreciation	(82,800)	(13,680)	27,792	27,792	$58,896	18,000
Warranty costs	(56,000)	(100,000)				(156,000)

Allman computes the amounts of deferred income taxes to be reported at the end of 2024 as shown in **Illustration 18A.4**.

ILLUSTRATION 18A.4 Computation of Deferred Income Taxes, End of 2024

Temporary Difference	**Future Taxable (Deductible) Amounts**	**Tax Rate**	**Deferred Tax (Asset)**	**Deferred Tax Liability**
Installment sales	$448,000	20%		$89,600
Depreciation	18,000	20		3,600
Warranty costs	(156,000)	20	$(31,200)	
Totals	$310,000		$(31,200)	$93,200*

*Because only a single tax rate is involved in all relevant years, these totals can be reconciled: $310,000 × .20 = ($31,200) + $93,200.

A temporary difference is caused by the use of the accrual basis for financial reporting purposes and the installment method for tax purposes. This temporary difference will result in future taxable amounts and hence a deferred tax liability. Because of the installment contracts completed in 2024, a temporary difference of $448,000 originates that will reverse in equal amounts over the next four years. The company expects to have taxable income in all future years, and there is only one enacted tax rate applicable to all future years. Allman uses that rate (20%) to compute the entire deferred tax liability resulting from this temporary difference.

The temporary difference caused by different depreciation policies for books and for tax purposes originates over three years and then reverses over three years. This difference will cause deductible amounts in 2025 and 2026 and taxable amounts in 2027, 2028, and 2029. These amounts sum to a net future taxable amount of $18,000 (which is the cumulative temporary difference at the end of 2024). Because the company expects to have taxable income in all future years and because there is only one tax rate enacted for all of the relevant future years, Allman applies that rate to the net future taxable amount to determine the related net deferred tax liability.

The third temporary difference is caused by different methods of accounting for warranties. This difference will result in deductible amounts in each of the two future years it takes to reverse. Because the company expects to report a positive income on all future tax returns and because there is only one tax rate enacted for each of the relevant future years, Allman uses the 20% rate to calculate the resulting deferred tax asset.

Deferred Tax Expense (Benefit) and the Journal Entry to Record Income Taxes—2024

To determine the deferred tax expense (benefit), we need to compare the beginning and ending balances of the deferred income tax accounts. **Illustration 18A.5** shows that computation.

ILLUSTRATION 18A.5
Computation of Deferred Tax Expense (Benefit), 2024

Deferred tax asset at the end of 2024	$ 31,200
Deferred tax asset at the beginning of 2024	–0–
Deferred tax expense (benefit)	$(31,200)
Deferred tax liability at the end of 2024	$ 93,200
Deferred tax liability at the beginning of 2024	–0–
Deferred tax expense (benefit)	$ 93,200

The $31,200 increase in the deferred tax asset causes a deferred tax benefit to be reported in the income statement. The $93,200 increase in the deferred tax liability during 2024 results in a deferred tax expense. As **Illustration 18A.6** shows, these two amounts **net** to a deferred tax expense of $62,000 for 2024.

ILLUSTRATION 18A.6
Computation of Net Deferred Tax Expense, 2024

Deferred tax expense (benefit)	$(31,200)
Deferred tax expense (benefit)	93,200
Net deferred tax expense for 2024	$ 62,000

Allman then computes the total income tax expense as shown in **Illustration 18A.7**.

ILLUSTRATION 18A.7
Computation of Total Income Tax Expense, 2024

Current tax expense for 2024	$30,000
Deferred tax expense for 2024	62,000
Income tax expense (total) for 2024	$92,000

Allman records income taxes payable, deferred income taxes, and income tax expense as follows.

Income Tax Expense	92,000	
Deferred Tax Asset	31,200	
Income Taxes Payable		30,000
Deferred Tax Liability		93,200

Financial Statement Presentation—2024

Companies should classify deferred tax assets and liabilities as noncurrent on the balance sheet. Multiple categories of deferred taxes are classified into a net noncurrent amount. **Illustration 18A.8** shows the classification of Allman's deferred tax accounts at the end of 2024.

ILLUSTRATION 18A.8 Classification of Deferred Tax Accounts, End of 2024

	Resulting Deferred Tax	
Temporary Difference	**(Asset)**	**Liability**
Installment sales		$89,600
Depreciation		3,600
Warranty costs	$(31,200)	
Totals	$(31,200)	$93,200

Thus, Allman reports a net noncurrent deferred tax liability of $62,000 ($93,200 – $31,200). The balance sheet at the end of 2024 reports the amounts shown in **Illustration 18A.9**.

ILLUSTRATION 18A.9 Balance Sheet Presentation of Deferred Taxes, 2024

Current liabilities	
Income taxes payable	$30,000
Long-term liabilities	
Deferred tax liability ($93,200 – $31,200)	$62,000

Illustration 18A.10 shows Allman's income statement for 2024.

ILLUSTRATION 18A.10 Income Statement Presentation of Income Tax Expense, 2024

Income before income taxes		$412,000
Income tax expense		
Current	$30,000	
Deferred	62,000	92,000
Net income		$320,000

Second Year—2025

1. During 2025, Allman collected $112,000 from customers for the receivables arising from contracts completed in 2024. The company expects recovery of the remaining receivables to result in taxable amounts of $112,000 in each of the following three years.
2. In 2025, the company completed four new contracts that allow for the customer to pay on an installment basis. These installment sales created new installment receivables. Future collections of these receivables will result in reporting gross profit of $64,000 for tax purposes in each of the next four years.
3. During 2025, Allman continued to depreciate the assets acquired in 2024 according to the depreciation schedules presented earlier. Thus, depreciation amounted to $90,000 for financial reporting purposes and $172,800 for tax purposes.
4. An analysis at the end of 2025, of the product warranty liability account, showed the following details.

Balance of liability at beginning of 2025	$156,000
Expense for 2025 income statement purposes	180,000
Amount paid for contracts completed in 2024	(56,000)
Amount paid for contracts completed in 2025	(50,000)
Balance of liability at end of 2025	$230,000

The balance of the liability is expected to require expenditures in the future as follows.

$100,000	in 2026 due to 2024 contracts
50,000	in 2026 due to 2025 contracts
80,000	in 2027 due to 2025 contracts
$230,000	

5. During 2025, nontaxable municipal bond interest revenue was $24,000.
6. Allman accrued a loss of $172,000 for financial reporting purposes because of pending litigation. This amount is not tax-deductible until the period the loss is realized, which the company estimates to be 2033.
7. Pretax financial income for 2025 amounts to $504,800.
8. The enacted tax rates still in effect are:

2024	30%
2025 and later years	20%

Taxable Income and Income Taxes Payable—2025

Allman computes taxable income for 2025 as shown in Illustration 18A.11.

ILLUSTRATION 18A.11 Computation of Taxable Income, 2025

Pretax financial income for 2025	$504,800
Permanent difference:	
Nontaxable revenue—municipal bond interest	(24,000)
Reversing temporary differences:	
Collection on 2024 Installment sales	112,000
Payments on warranties from 2024 contracts	(56,000)
Originating temporary differences:	
Excess gross profit per books—2025 contracts	(256,000)
Excess depreciation per tax	(82,800)
Excess warranty expense per books—2025 contracts	130,000
Loss accrual per books	172,000
Taxable income for 2025	$500,000

Income taxes payable for 2025 are as shown in Illustration 18A.12.

ILLUSTRATION 18A.12 Computation of Income Taxes Payable, End of 2025

Taxable income for 2025	$500,000
Tax rate	20%
Income taxes payable (current tax expense) for 2025	$100,000

Computing Deferred Income Taxes—End of 2025

The schedule in Illustration 18A.13 summarizes the temporary differences existing at the end of 2025 and the resulting future taxable and deductible amounts.

ILLUSTRATION 18A.13 Schedule of Future Taxable and Deductible Amounts, End of 2025

	Future Years					
	2026	2027	2028	2029	2033	Total
Future taxable (deductible) amounts:						
Installment sales—2024	$112,000	$112,000	$112,000			$336,000
Installment sales—2025	64,000	64,000	64,000	$64,000		256,000
Depreciation	(13,680)	27,792	27,792	58,896		100,800
Warranty costs	(150,000)	(80,000)				(230,000)
Loss accrual					$(172,000)	(172,000)

Allman computes the amounts of deferred income taxes to be reported at the end of 2025 as shown in **Illustration 18A.14**.

ILLUSTRATION 18A.14
Computation of Deferred Income Taxes, End of 2025

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax (Asset)	Deferred Tax Liability
Installment sales	$592,000*	20%		$118,400
Depreciation	100,800	20		20,160
Warranty costs	(230,000)	20	$(46,000)	
Loss accrual	(172,000)	20	(34,400)	
Totals	$290,800		$(80,400)**	$138,560**

*Cumulative temporary difference = $336,000 + $256,000
**Because of a flat tax rate, these totals can be reconciled: $290,800 × .20 = $(80,400) + $138,560

Deferred Tax Expense (Benefit) and the Journal Entry to Record Income Taxes—2025

To determine the deferred tax expense (benefit), Allman must compare the beginning and ending balances of the deferred income tax accounts, as shown in **Illustration 18A.15**.

ILLUSTRATION 18A.15
Computation of Deferred Tax Expense (Benefit) 2025

Deferred tax asset at the end of 2025	$ 80,400
Deferred tax asset at the beginning of 2025	31,200
Deferred tax expense (benefit)	$ (49,200)
Deferred tax liability at the end of 2025	$138,560
Deferred tax liability at the beginning of 2025	93,200
Deferred tax expense (benefit)	$ 45,360

The deferred tax expense (benefit) and the total income tax expense for 2025 are, therefore, as shown in **Illustration 18A.16**.

ILLUSTRATION 18A.16
Classification of Deferred Tax Accounts, End of 2025

Deferred tax expense (benefit)	$(49,200)
Deferred tax expense (benefit)	45,360
Deferred tax benefit for 2025	(3,840)
Current tax expense for 2025	100,000
Income tax expense (total) for 2025	$ 96,160

The deferred tax expense of $45,360 and the deferred tax benefit of $49,200 net to a deferred tax benefit of $3,840 for 2025.

Allman records income taxes for 2025 with the following journal entry.

Income Tax Expense	96,160	
Deferred Tax Asset	49,200	
Income Taxes Payable		100,000
Deferred Tax Liability		45,360

Financial Statement Presentation—2025

Illustration 18A.17 shows the classification of Allman's deferred tax accounts at the end of 2025.

ILLUSTRATION 18A.17 Computation of Total Income Tax Expense, 2025

Temporary Difference	Resulting Deferred Tax (Asset)	Liability
Installment sales		$118,400
Depreciation		20,160
Warranty costs	$(46,000)	
Loss accrual	(34,400)	
Totals	$(80,400)	$138,560

Allman's balance sheet at the end of 2025 reports the amounts shown in Illustration 18A.18.

ILLUSTRATION 18A.18 Balance Sheet Presentation of Deferred Taxes, End of 2025

Current liabilities	
Income taxes payable	$100,000
Noncurrent liabilities	
Deferred tax liability ($138,560 − $80,400)	$58,160

Illustration 18A.19 shows the income statement for 2025.

ILLUSTRATION 18A.19 Income Statement Presentation of Income Tax Expense, 2025

Income before income taxes		$504,800
Income tax expense		
Current	$100,000	
Deferred	3,840	96,160
Net income		$408,640

APPENDIX **18B**

Accounting for Net Operating Loss Carrybacks

LEARNING OBJECTIVE *6

Explain the accounting for loss carrybacks.

The TCJA permitted the carryforward of current net operating losses to offset future taxable income. Prior rules for net operating losses permitted net operating losses to be carried back for two years and carried forward for 20 years. Under the TCJA, companies have indefinite carryforward periods.

However, the TCJA eliminated carryback provisions for NOLs. The carryback provision had been sort of a reprieve for money-losing companies that generated an NOL. That is, by carrying the NOL back to two profitable years on amended tax returns, net-loss companies could free up some cash in the year of the loss. In this appendix, we present the accounting for loss carrybacks as future tax laws may reinstitute carryback provisions.[9]

[9]In fact, the CARES Act (2020) reinstated the carryback provision for 2018, 2019, and 2020 tax years to help companies stem the negative effects of the global pandemic. As with carryforwards, carryback periods have varied over time. Indeed, as part of the Economic Recovery Act of 2009, Congress enacted a temporary extension of the carryback period from two to five years for operating losses incurred in 2008 and 2009 (during the financial crisis). It is estimated that the companies in the S&P 500 reaped a refund of $5 billion due to this change. See D. Zion, A. Varshney, and C. Cornett, "Spinning Losses into Gold," *Equity Research—Accounting and Tax*, Credit Suisse (November 12, 2009).

Loss Carryback

Through use of a **loss carryback**, a company may carry the net operating loss back two years and receive refunds for income taxes paid in those years. The company must apply the loss to the earlier year first and then to the second year. It may **carry forward** any loss remaining after the two-year carryback to offset future taxable income. **Illustration 18B.1** diagrams the loss carryback procedure, assuming a loss in 2025.

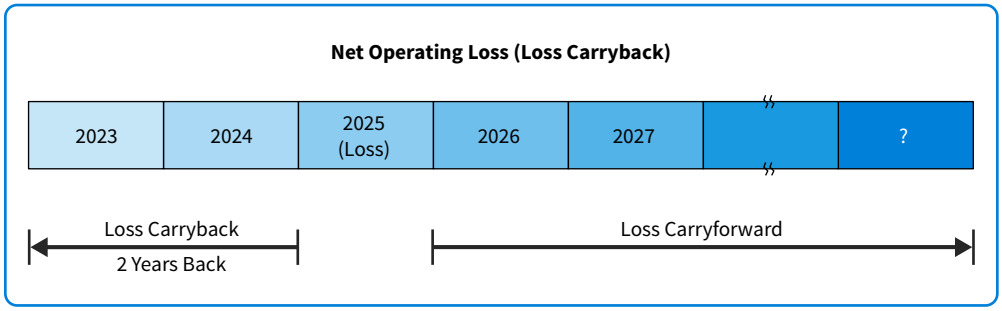


ILLUSTRATION 18B.1 Loss Carryback Procedure

Loss Carryback Example

To illustrate the accounting procedures for a net operating loss carryback, assume that Groh Inc. has no temporary or permanent differences. Groh experiences the following.

Year	Taxable Income or Loss	Tax Rate	Tax Paid
2022	$ 50,000	20%	$10,000
2023	100,000	15%	15,000
2024	200,000	25%	50,000
2025	(500,000)	–	–0–

In 2025, Groh incurs a net operating loss that it decides to carry back.

- Generally, Groh must apply the carryback first to the **second year preceding the loss year**. Therefore, it carries the loss back first to 2023.
- Then, Groh carries back any unused loss to 2024. Accordingly, Groh files amended tax returns for 2023 and 2024, receiving refunds for the $65,000 ($15,000 + $50,000) of taxes paid in those years.

For accounting as well as tax purposes, the $65,000 represents the **tax effect (tax benefit)** of the loss carryback. Groh should recognize this tax effect in 2025, the loss year. Since the tax loss gives rise to a refund that is both measurable and currently realizable, Groh should recognize the associated tax benefit in this loss period.

Groh makes the following journal entry for 2025.

Income Tax Refund Receivable	65,000	
Income Tax Expense (Loss Carryback)		65,000

Groh reports the account debited, **Income Tax Refund Receivable**, on the balance sheet as a current asset at December 31, 2025. It reports the account credited on the income statement for 2025 as shown in **Illustration 18B.2**.

Groh Inc.
Income Statement (partial) for 2025

Operating loss before income taxes	$(500,000)
Income tax benefit	
Income tax expense (loss carryback)	65,000
Net loss	$(435,000)

ILLUSTRATION 18B.2 Recognition of the Benefit of the Loss Carryback in the Loss Year

Since the $500,000 net operating loss for 2025 exceeds the $300,000 total taxable income from the two preceding years, Groh carries forward the remaining $200,000 loss.

Loss Carryback with Carryforward

If a carryback fails to fully absorb a net operating loss (as in the Groh example) or if the company decides not to carry the loss back, then it can carry forward the loss. To illustrate, return to the Groh example from the preceding section. In 2025, the company records the tax effect of the $200,000 loss carryforward as a deferred tax asset of $50,000 ($200,000 × .25), assuming that the enacted future tax rate is 25%. Groh records the benefits of the carryback and the carryforward in 2025 as follows.

To recognize benefit of loss carryback:

Income Tax Refund Receivable	65,000	
Income Tax Expense (Loss Carryback)		65,000

To recognize benefit of loss carryforward:

Deferred Tax Asset	50,000	
Income Tax Expense (Loss Carryforward)		50,000

Groh realizes the income tax refund receivable of $65,000 immediately as a refund of taxes paid in the past. It establishes a Deferred Tax Asset account for the benefits of future tax savings. The two accounts credited are contra income tax expense items, which Groh presents on the 2025 income statement shown in **Illustration 18B.3**.

ILLUSTRATION 18B.3 Recognition of the Benefit of the Loss Carryback and Carryforward in the Loss Year

Groh Inc.
Income Statement (partial) for 2025

Operating loss before income taxes		$(500,000)
Income tax benefit		
Income tax expense (loss carryback)	$65,000	
Income tax expense (loss carryforward)	50,000	115,000
Net loss		$(385,000)

The **current tax benefit** of $65,000 is the income tax refundable for the year. As shown earlier, Groh determines this amount by applying the carryback provisions of the tax law to the taxable loss for 2025. The $50,000 is the **deferred tax benefit** for the year, which results from an increase in the deferred tax asset, as discussed in the chapter.

Review and Practice

Key Terms Review

asset-liability method 18-36
average tax rate 18-20(*n*)
current tax expense (benefit) 18-6, 18-37
deductible amounts 18-4
deductible temporary difference 18-15
deferred tax asset 18-9
deferred tax benefit 18-11
deferred tax expense 18-6, 18-11
deferred tax liability 18-5
effective tax rate 18-20
enacted tax rate 18-20
*Income Tax Refund Receivable 18-45
*loss carryback 18-45
loss carryforward 18-24
more likely than not 18-12
net operating loss (NOL) 18-23
originating temporary difference 18-16
permanent difference 18-18
pretax financial income 18-2
reversing difference 18-16
taxable amount 18-4
taxable income 18-3
taxable temporary difference 18-15
*tax effect (tax benefit) 18-45
temporary difference 18-4
uncertain tax positions 18-35
valuation allowance 18-12

Learning Objectives Review

1 Describe the fundamentals of accounting for income taxes.

Companies compute pretax financial income (or income for book purposes) in accordance with generally accepted accounting principles. They compute taxable income (or income for tax purposes) in accordance with prescribed tax regulations. Because tax regulations and GAAP differ in many ways, so frequently do pretax financial income and taxable income. Differences may exist, for example, in the timing of revenue recognition and the timing of expense recognition.

Deferred tax liability. Revenue recognized for book purposes in the period earned but deferred and reported as revenue for tax purposes when collected results in future taxable amounts. The future taxable amounts will occur in the periods the company recovers the receivable and reports the collections as revenue for tax purposes. This results in a deferred tax liability.

Deferred tax asset. An accrued warranty expense that a company pays for and deducts for tax purposes, in a period later than the period in which it incurs and recognizes it for book purposes, results in future deductible amounts. The future deductible amounts will occur in the periods during which the company settles the related liability for book purposes. This results in a deferred tax asset.

Valuation allowance. A deferred tax asset should be reduced by a valuation allowance if, based on all available evidence, it is more likely than not (a level of likelihood that is at least slightly more than 50%) that it will not realize some portion or all of the deferred tax asset. The company should carefully consider all available evidence, both positive and negative, to determine whether, based on the weight of available evidence, it needs a valuation allowance.

2 Identify additional issues in accounting for income taxes.

Significant components of income tax expense should be disclosed in the income statement or in the notes to the financial statements. The most commonly encountered components are the current expense (or benefit) and the deferred expense (or benefit).

Examples of temporary differences are (1) revenues or gains that are taxable after recognition in financial income, (2) expenses or losses that are deductible after recognition in financial income, (3) revenues or gains that are taxable before recognition in financial income, and (4) expenses or losses that are deductible before recognition in financial income.

Examples of permanent differences are (1) items recognized for financial reporting purposes but not for tax purposes, and (2) items recognized for tax purposes but not for financial reporting purposes.

Companies may use tax rates other than the current rate only after enactment of the future tax rates. When a change in the tax rate is enacted, a company should immediately recognize its effect on the deferred income tax accounts. The company reports the effects as an adjustment to income tax expense in the period of the change.

3 Explain the accounting for loss carryforwards.

A company may carry a net operating loss forward indefinitely. A valuation allowance may be established for the deferred tax asset that arises from the carryforward, depending on uncertainty about future taxable income.

4 Describe the presentation of deferred income taxes in financial statements.

Companies report deferred tax accounts on the balance sheet as assets and liabilities. These deferred tax accounts are classified as a net noncurrent amount.

Companies apply the following basic principles in accounting for income taxes at the date of the financial statements. (1) Recognize a current tax liability or asset for the estimated taxes payable or refundable on the tax return for the current year. (2) Recognize a deferred tax liability or asset for the estimated future tax effects attributable to temporary differences and carryforwards using the enacted tax rate. (3) Base the measurement of current and deferred tax liabilities and assets on provisions of the enacted tax law. (4) Reduce the measurement of deferred tax assets, if necessary, by the amount of any tax benefits that, based on available evidence, companies do not expect to realize.

*5 Apply the concepts and procedures of interperiod tax allocation.

Accounting for deferred taxes involves the following steps. (1) Calculate taxable income and income taxes payable for the year. (2) Compute deferred income taxes at the end of the year. (3) Determine deferred tax expense (benefit) and make the journal entry to record income taxes. (4) Classify the net deferred tax asset or liability as noncurrent in the financial statements.

*6 Explain the accounting for loss carrybacks.

When permitted by law, a company may carry a net operating loss back two years and receive refunds for taxes paid in those years. Any loss remaining after the two-year carryback may be carried forward to offset future taxable income.

Enhanced Review and Practice

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. Explain the difference between pretax financial income and taxable income.

2. What are the two objectives of accounting for income taxes?

3. Explain the meaning of a temporary difference as it relates to deferred tax computations, and give three examples.

4. Differentiate between an originating temporary difference and a reversing difference.

5. The book basis of depreciable assets for Erwin Co. is $900,000, and the tax basis is $700,000 at the end of 2026. The enacted tax rate is 17% for all periods. Determine the amount of deferred taxes to be reported on the balance sheet at the end of 2026.

6. Roth Inc. has a deferred tax liability of $68,000 at the beginning of 2026. At the end of 2026, it reports accounts receivable on the books at $90,000 and the tax basis at zero (its only temporary difference). If the enacted tax rate is 17% for all periods, and income taxes payable for the period is $230,000, determine the amount of total income tax expense to report for 2026.

7. What is the difference between a future taxable amount and a future deductible amount? When is it appropriate to record a valuation account for a deferred tax asset?

8. Pretax financial income for Lake Inc. is $300,000, and its taxable income is $100,000 for 2026. Its only temporary difference at the end of the period relates to a $70,000 difference due to excess depreciation for tax purposes. If the tax rate is 20% for all periods, compute the amount of income tax expense to report in 2026. No deferred income taxes existed at the beginning of the year.

9. Feagler Company's current income taxes payable related to its taxable income for 2025 is $460,000. In addition, Feagler's deferred tax asset decreased $20,000 during 2025. What is Feagler's income tax expense for 2025?

10. Lee Company's current income taxes payable related to its taxable income for 2025 is $320,000. In addition, Lee's deferred tax liability increased $40,000 and its deferred tax asset increased $10,000 during 2025. What is Lee's income tax expense for 2025?

11. How are deferred tax assets and deferred tax liabilities reported on the balance sheet?

12. Interest on municipal bonds is referred to as a permanent difference when determining the proper amount to report for deferred taxes. Explain the meaning of permanent differences, and give two other examples.

13. At the end of the year, Falabella Co. has pretax financial income of $550,000. Included in the $550,000 is $70,000 interest income on municipal bonds, $25,000 fine for dumping hazardous waste, and depreciation of $60,000. Depreciation for tax purposes is $45,000. Compute income taxes payable, assuming the tax rate is 30% for all periods.

14. Addison Co. has one temporary difference at the beginning of 2025 of $500,000. The deferred tax liability established for this amount is $150,000, based on a tax rate of 30%. The temporary difference will provide the following taxable amounts: $100,000 in 2026, $200,000 in 2027, and $200,000 in 2028. If a new tax rate for 2028 of 20% is enacted into law at the end of 2025, what is the journal entry necessary in 2025 (if any) to adjust deferred taxes?

15. What are some of the reasons that the components of income tax expense should be disclosed and a reconciliation between the effective tax rate and the statutory tax rate be provided?

16. Describe a "loss carryforward." Discuss the uncertainty when it arises.

17. What is the possible treatment for tax purposes of a net operating loss? What is the proper treatment of a net operating loss for financial reporting purposes?

18. What controversy relates to the accounting for net operating loss carryforwards?

19. What is an uncertain tax position, and what are the general guidelines for accounting for uncertain tax positions?

Brief Exercises

BE18.1 (LO 1) In 2025, Amirante Corporation had pretax financial income of $168,000 and taxable income of $120,000. The difference is due to the use of different depreciation methods for tax and accounting purposes. The effective tax rate is 20%. Compute the amount to be reported as income taxes payable at December 31, 2025.

BE18.2 (LO 1) Oxford Corporation began operations in 2025 and reported pretax financial income of $225,000 for the year. Oxford's tax depreciation exceeded its book depreciation by $40,000. Oxford's tax rate for 2025 and years thereafter is 30%. In its December 31, 2025, balance sheet, what amount of deferred tax liability should be reported?

BE18.3 (LO 1, 2) Using the information from BE18.2, assume this is the only difference between Oxford's pretax financial income and taxable income. Prepare the journal entry to record the income tax expense, deferred income taxes, and income taxes payable, and show how the deferred tax liability will be classified on the December 31, 2025, balance sheet.

BE18.4 (LO 1, 2) At December 31, 2025, Appaloosa Corporation had a deferred tax liability of $25,000. At December 31, 2026, the deferred tax liability is $42,000. The corporation's 2026 current tax expense is $48,000. What amount should Appaloosa report as total 2026 income tax expense?

BE18.5 (LO 1, 2) At December 31, 2025, Suffolk Corporation had an estimated warranty liability of $105,000 for accounting purposes and $0 for tax purposes. (The warranty costs are not deductible until paid.) The effective tax rate is 20%. Compute the amount Suffolk should report as a deferred tax asset at December 31, 2025.

BE18.6 (LO 1, 2) At December 31, 2025, Percheron Inc. had a deferred tax asset of $30,000. At December 31, 2026, the deferred tax asset is $59,000. The corporation's 2026 current tax expense is $61,000. What amount should Percheron report as total 2026 income tax expense?

BE18.7 (LO 1, 2) At December 31, 2025, Hillyard Corporation has a deferred tax asset of $200,000. After a careful review of all available evidence, it is determined that it is more likely than not that $60,000 of this deferred tax asset will not be realized. Prepare the necessary journal entry.

BE18.8 (LO 1, 2) Mitchell Corporation had income before income taxes of $195,000 in 2025. Mitchell's current income tax expense is $24,000, and deferred income tax expense is $15,000. Prepare Mitchell's 2025 income statement, beginning with "Income before income taxes."

BE18.9 (LO 1, 2) Shetland Inc. had pretax financial income of $154,000 in 2025. Included in the computation of that amount is insurance expense of $4,000 which is not deductible for tax purposes. In addition, depreciation for tax purposes exceeds accounting depreciation by $10,000. Prepare Shetland's journal entry to record 2025 taxes, assuming a tax rate of 25%.

BE18.10 (LO 1, 2) Clydesdale Corporation has a cumulative temporary difference related to depreciation of $580,000 at December 31, 2025. This difference will reverse as follows: 2026, $42,000; 2027, $244,000; and 2028, $294,000. Enacted tax rates are 17% for 2026 and 2027, and 20% for 2028. Compute the amount Clydesdale should report as a deferred tax liability at December 31, 2025.

BE18.11 (LO 2) At December 31, 2025, Fell Corporation had a deferred tax liability of $340,000, resulting from future taxable amounts of $2,000,000 and an enacted tax rate of 17%. In May 2026, a new income tax act is signed into law that raises the tax rate to 20% for 2026 and future years. Prepare the journal entry for Fell to adjust the deferred tax liability.

BE18.12 (LO 3) Rode Inc. incurred a net operating loss of $500,000 in 2025. The tax rate for all years is 20%. Prepare the journal entries to record the benefits of the loss carryforward. Rode expects to return to profitability in 2026.

BE18.13 (LO 3) Use the information for Rode Inc. given in BE18.12. Assume that it is more likely than not that the entire net operating loss carryforward will not be realized in future years. Prepare all the journal entries necessary at the end of 2025.

BE18.14 (LO 4) Youngman Corporation has temporary differences at December 31, 2025, that result in the following deferred taxes.

Deferred tax liability related to depreciation difference	$38,000
Deferred tax asset related to warranty liability	62,000
Deferred tax liability related to revenue recognition	96,000
Deferred tax asset related to litigation accruals	27,000

Indicate how these balances would be presented in Youngman's December 31, 2025, balance sheet.

***BE18.15 (LO 6)** Nolan Corporation had the following tax information.

Year	Taxable Income	Tax Rate	Taxes Paid
2023	$300,000	35%	$105,000
2024	325,000	30	97,500
2025	400,000	30	120,000

In 2026, Nolan suffered a net operating loss of $480,000, which it elected to carryback. The 2026 enacted tax rate is 29%. Prepare Nolan's entry to record the effect of the loss carryback.

***BE18.16 (LO 6)** Sylvie Inc. incurred a net operating loss of $500,000 in 2025. Combined income for 2023 and 2024 was $350,000. The tax rate for all years is 20%. Sylvie elects the carryback option. Prepare the journal entries to record the benefits of the loss carryback and the loss carryforward. Sylvie expects to return to profitability in 2026.

Exercises

E18.1 (LO 1, 2) Excel (One Temporary Difference, Future Taxable Amounts, One Rate, No Beginning Deferred Taxes) South Carolina Corporation has one temporary difference at the end of 2025 that will reverse and cause taxable amounts of $55,000 in 2026, $60,000 in 2027, and $65,000 in 2028. South Carolina's pretax financial income for 2025 is $300,000, and the tax rate is 30% for all years. There are no deferred taxes at the beginning of 2025.

Instructions

a. Compute taxable income and income taxes payable for 2025.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025.

c. Prepare the income tax expense section of the income statement for 2025, beginning with the line "Income before income taxes."

E18.2 (LO 1, 2) (Two Differences, No Beginning Deferred Taxes, Tracked through 2 Years) The following information is available for Wenger Corporation for 2024 (its first year of operations).

1. Excess of tax depreciation over book depreciation, $40,000. This $40,000 difference will reverse equally over the years 2025–2028.

2. Deferral, for book purposes, of $20,000 of rent received in advance. The rent will be recognized in 2025.

3. Pretax financial income, $300,000.

4. Tax rate for all years, 20%.

Instructions

a. Compute taxable income for 2024.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2024.

c. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025, assuming taxable income of $325,000.

E18.3 (LO 1, 2) Excel (One Temporary Difference, Future Taxable Amounts, One Rate, Beginning Deferred Taxes) Bandung Corporation began 2025 with a $46,000 balance in the Deferred Tax Liability account. At the end of 2025, the related cumulative temporary difference amounts to $350,000, and it will reverse evenly over the next 2 years. Pretax accounting income for 2025 is $525,000, the tax rate for all years is 20%, and taxable income for 2025 is $405,000.

Instructions

a. Compute income taxes payable for 2025.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025.

c. Prepare the income tax expense section of the income statement for 2025 beginning with the line "Income before income taxes."

E18.4 (LO 1, 2) (Three Differences, Compute Taxable Income, Entry for Taxes) Zurich Company reports pretax financial income of $70,000 for 2025. The following items cause taxable income to be different than pretax financial income.

1. Depreciation on the tax return is greater than depreciation on the income statement by $16,000.

2. Rent collected on the tax return is greater than rent recognized on the income statement by $22,000.

3. Fines for pollution appear as an expense of $11,000 on the income statement.

Zurich's tax rate is 30% for all years, and the company expects to report taxable income in all future years. There are no deferred taxes at the beginning of 2025.

Instructions

a. Compute taxable income and income taxes payable for 2025.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025.

c. Prepare the income tax expense section of the income statement for 2025, beginning with the line "Income before income taxes."

d. Compute the effective income tax rate for 2025.

E18.5 (LO 1, 2) (Two Temporary Differences, One Rate, Beginning Deferred Taxes) The following facts relate to Krung Thep Corporation.

1. Deferred tax liability, January 1, 2025, $20,000.
2. Deferred tax asset, January 1, 2025, $0.
3. Taxable income for 2025, $95,000.
4. Pretax financial income for 2025, $200,000.
5. Cumulative temporary difference at December 31, 2025, giving rise to future taxable amounts, $240,000.
6. Cumulative temporary difference at December 31, 2025, giving rise to future deductible amounts, $35,000.
7. Tax rate for all years, 20%.
8. The company is expected to operate profitably in the future.

Instructions

a. Compute income taxes payable for 2025.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025.

c. Prepare the income tax expense section of the income statement for 2025, beginning with the line "Income before income taxes."

E18.6 (LO 1, 2) (Identify Temporary or Permanent Differences) Listed below are items that are commonly accounted for differently for financial reporting purposes than they are for tax purposes.

Instructions

For each item below, indicate whether it involves:

1. A temporary difference that will result in future deductible amounts and, therefore, will usually give rise to a deferred income tax asset.
2. A temporary difference that will result in future taxable amounts and, therefore, will usually give rise to a deferred income tax liability.
3. A permanent difference.

Use the appropriate number to indicate your answer for each.

a. _____The MACRS depreciation system is used for tax purposes, and the straight-line depreciation method is used for financial reporting purposes for some plant assets.

b. _____A landlord collects some rents in advance. Rents received are taxable in the period when they are received.

c. _____Expenses are incurred in obtaining tax-exempt income.

d. _____Costs of guarantees and warranties are estimated and accrued for financial reporting purposes.

e. _____Installment sales of investments are accounted for by the accrual method for financial reporting purposes and the installment method for tax purposes.

f. _____For some assets, straight-line depreciation is used for both financial reporting purposes and tax purposes, but the assets' lives are shorter for tax purposes.

g. _____Interest is received on an investment in tax-exempt municipal obligations.

h. _____Proceeds are received from a life insurance company because of the death of a key officer. (The company carries a policy on key officers.)

i. _____The tax return reports a deduction for 80% of the dividends received from U.S. corporations. The cost method is used in accounting for the related investments for financial reporting purposes.

j. _____Estimated losses on pending lawsuits and claims are accrued for books. These losses are tax-deductible in the period(s) when the related liabilities are settled.

k. _____Expenses on stock options are accrued for financial reporting purposes.

E18.7 (LO 1, 2) (Terminology, Relationships, Computations, Entries)

Instructions

Complete the following statements by filling in the blanks.

a. In a period in which a taxable temporary difference reverses, the reversal will cause taxable income to be _____ (less than, greater than) pretax financial income.

b. If a $38,000 balance in Deferred Tax Asset was computed by use of a 20% rate, the underlying cumulative temporary difference amounts to $_____.

c. Deferred taxes _____ (are, are not) recorded to account for permanent differences.

d. If a taxable temporary difference originates in 2025, it will cause taxable income for 2025 to be _____ (less than, greater than) pretax financial income for 2025.

e. If total tax expense is $50,000 and deferred tax expense is $65,000, then the current portion of the expense computation is referred to as current tax _____ (expense, benefit) of $_____.

f. If a corporation's tax return shows taxable income of $100,000 for Year 2 and a tax rate of 20%, how much will appear on the December 31, Year 2, balance sheet for "Income taxes payable" if the company has made estimated tax payments of $18,250 for Year 2? $_____.

g. An increase in the Deferred Tax Liability account on the balance sheet is recorded by a _____ (debit, credit) to the Income Tax Expense account.

h. An income statement that reports current tax expense of $82,000 and deferred tax benefit of $23,000 will report total income tax expense of $_____.

i. A valuation account is needed whenever it is judged to be _____ that a portion of a deferred tax asset _____ (will be, will not be) realized.

j. If the tax return shows total taxes due for the period of $75,000 but the income statement shows total income tax expense of $55,000, the difference of $20,000 is referred to as deferred tax _____ (expense, benefit).

E18.8 (LO 1, 2) (Two Temporary Differences, One Rate, 3 Years) Button Company has the following two temporary differences between its income tax expense and income taxes payable.

	2025	2026	2027
Pretax financial income	$840,000	$910,000	$945,000
Excess depreciation expense on tax return	(30,000)	(40,000)	(10,000)
Excess warranty expense in financial income	20,000	10,000	8,000
Taxable income	$830,000	$880,000	$943,000

The income tax rate for all years is 20%.

Instructions

a. Assuming there were no temporary differences prior to 2025, prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025, 2026, and 2027.

b. Indicate how deferred taxes will be reported on the 2027 balance sheet. Button's product warranty is for 12 months.

c. Prepare the income tax expense section of the income statement for 2027, beginning with the line "Pretax financial income."

E18.9 (LO 4) (Three Differences, Classify Deferred Taxes) At December 31, 2024, Belmont Company had a net deferred tax liability of $375,000. An explanation of the items that compose this balance is as follows.

Temporary Differences	Resulting Balances in Deferred Taxes
1. Excess of tax depreciation over book depreciation.	$200,000
2. Accrual, for book purposes, of estimated loss contingency from pending lawsuit that is expected to be settled in 2025. The loss will be deducted on the tax return when paid.	(50,000)
3. Accrual method used for book purposes and installment method used for tax purposes for an isolated installment sale of an investment.	225,000
	$375,000

In analyzing the temporary differences, you find that $30,000 of the depreciation temporary difference will reverse in 2025, and $120,000 of the temporary difference due to the installment sale will reverse in 2025. The tax rate for all years is 20%.

Instructions

Indicate the manner in which deferred taxes should be presented on Belmont Company's December 31, 2024, balance sheet.

E18.10 (LO 1, 2) (Two Temporary Differences, One Rate, Beginning Deferred Taxes, Compute Pretax Financial Income) The following facts relate to Duncan Corporation.

1. Deferred tax liability, January 1, 2025, $30,000.
2. Deferred tax asset, January 1, 2025, $10,000.
3. Taxable income for 2025, $105,000.
4. Cumulative temporary difference at December 31, 2025, giving rise to future taxable amounts, $230,000.
5. Cumulative temporary difference at December 31, 2025, giving rise to future deductible amounts, $95,000.
6. Tax rate for all years, 20%. No permanent differences exist.
7. The company is expected to operate profitably in the future.

Instructions

a. Compute the amount of pretax financial income for 2025.

b. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2025.

c. Prepare the income tax expense section of the income statement for 2025 beginning with the line "Income before income taxes."

d. Compute the effective tax rate for 2025.

E18.11 (LO 1, 2) (One Difference, Multiple Rates, Effect of Beginning Balance versus No Beginning Deferred Taxes) At the end of 2024, Lucretia McEvil Company has $180,000 of cumulative temporary differences that will result in reporting the following future taxable amounts.

2025	$ 60,000
2026	50,000
2027	40,000
2028	30,000
	$180,000

Tax rates enacted as of the beginning of 2023 are:

2023 and 2024	40%
2025 and 2026	30%
2027 and later	25%

McEvil's taxable income for 2024 is $320,000. Taxable income is expected in all future years.

Instructions

a. Prepare the journal entry for McEvil to record income taxes payable, deferred income taxes, and income tax expense for 2024, assuming that there were no deferred taxes at the end of 2023.

b. Prepare the journal entry for McEvil to record income taxes payable, deferred income taxes, and income tax expense for 2024, assuming that there was a balance of $22,000 in a Deferred Tax Liability account at the end of 2023.

E18.12 (LO 1, 2) (Deferred Tax Asset with and without Valuation Account) Jennifer Capriati Corp. has a deferred tax asset account with a balance of $75,000 at the end of 2024 due to a single cumulative temporary difference of $375,000. At the end of 2025, this same temporary difference has increased to a cumulative amount of $450,000. Taxable income for 2025 is $820,000. The tax rate is 20% for all years. No valuation account related to the deferred tax asset is in existence at the end of 2024.

Instructions

a. Record income tax expense, deferred income taxes, and income taxes payable for 2025, assuming that it is more likely than not that the deferred tax asset will be realized.

b. Assuming that it is more likely than not that $15,000 of the deferred tax asset will not be realized, prepare the journal entry at the end of 2025 to record the valuation account.

E18.13 (LO 1, 2) (Deferred Tax Asset with Previous Valuation Account) Assume the same information as E18.12, except that at the end of 2024, Jennifer Capriati Corp. had a valuation account related to its deferred tax asset of $22,500.

Instructions

a. Record income tax expense, deferred income taxes, and income taxes payable for 2025, assuming that it is more likely than not that the deferred tax asset will be realized in full.

b. Record income tax expense, deferred income taxes, and income taxes payable for 2025, assuming that it is more likely than not that none of the deferred tax asset will be realized.

E18.14 (LO 1, 2, 4) (Deferred Tax Liability, Change in Tax Rate, Prepare Section of Income Statement) Novotna Inc.'s only temporary difference at the beginning and end of 2024 is caused by a $3 million deferred gain for tax purposes for an installment sale of a plant asset, and the related receivable (only one-half of which is classified as a current asset) is due in equal installments in 2025 and 2026. The related deferred tax liability at the beginning of the year is $900,000. In the third quarter of 2024, a new tax rate of 20% is enacted into law and is scheduled to become effective for 2026. Taxable income for 2024 is $5,000,000, and taxable income is expected in all future years.

Instructions

a. Determine the amount reported as a deferred tax liability at the end of 2024. Indicate proper classification(s).

b. Prepare the journal entry (if any) necessary to adjust the deferred tax liability when the new tax rate is enacted into law.

c. Draft the income tax expense portion of the income statement for 2024. Begin with the line "Income before income taxes." Assume no permanent differences exist.

E18.15 (LO 1, 2) (Two Temporary Differences, Tracked through 3 Years, Multiple Rates) Taxable income and pretax financial income would be identical for Huber Co. except for its treatments of gross profit on installment sales and estimated costs of warranties. The following income computations have been prepared.

Taxable Income	**2024**	**2025**	**2026**
Excess of revenues over expenses (excluding two temporary differences)	$160,000	$210,000	$90,000
Installment gross profit collected	8,000	8,000	8,000
Expenditures for warranties	(5,000)	(5,000)	(5,000)
Taxable income	$163,000	$213,000	$93,000
Pretax Financial Income			
Excess of revenues over expenses (excluding two temporary differences)	$160,000	$210,000	$90,000
Installment gross profit recognized	24,000	–0–	–0–
Estimated cost of warranties	(15,000)	–0–	–0–
Income before taxes	$169,000	$210,000	$90,000

The tax rates in effect are 2024, 20%; 2025 and 2026, 25%. All tax rates were enacted into law on January 1, 2024. No deferred income taxes existed at the beginning of 2024. Taxable income is expected in all future years.

Instructions

Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2024, 2025, and 2026.

E18.16 (LO 1, 2) (Three Differences, Multiple Rates, Future Taxable Income) During 2025, Kate Holmes Co.'s first year of operations, the company reports pretax financial income at $250,000. Holmes's enacted tax rate is 45% for 2025 and 20% for all later years. Holmes expects to have taxable income in each of the next 5 years. The effects on future tax returns of temporary differences existing at December 31, 2025, are summarized as follows.

	Future Years					
	2026	**2027**	**2028**	**2029**	**2030**	**Total**
Future taxable (deductible) amounts:						
Installment sales	$32,000	$32,000	$32,000			$ 96,000
Depreciation	6,000	6,000	6,000	$6,000	$6,000	30,000
Unearned rent	(50,000)	(50,000)				(100,000)

Instructions

a. Complete the schedule below to compute deferred taxes at December 31, 2025.

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	December 31, 2025 Deferred Tax (Asset)	December 31, 2025 Deferred Tax Liability
Installment sales	$ 96,000			
Depreciation	30,000			
Unearned rent	(100,000)			
Totals	$			

b. Compute taxable income for 2025.

c. Prepare the journal entry to record income taxes payable, deferred taxes, and income tax expense for 2025.

E18.17 (LO 1, 2) (Two Differences, One Rate, Beginning Deferred Balance, Compute Pretax Financial Income) Andy McDowell Co. establishes a $100 million liability at the end of 2025 for the estimated site-cleanup costs at two of its manufacturing facilities. All related closing costs will be paid and deducted on the tax return in 2026. Also, at the end of 2025, the company has $50 million of temporary differences due to excess depreciation for tax purposes, $7 million of which will reverse in 2026.

The enacted tax rate for all years is 20%, and the company pays taxes of $32 million on $160 million of taxable income in 2025. McDowell expects to have taxable income in 2026.

Instructions

a. Determine the deferred taxes to be reported at the end of 2025.

b. Indicate how the deferred taxes computed in (a) are to be reported on the balance sheet.

c. Assuming that the only deferred tax account at the beginning of 2025 was a deferred tax liability of $5,000,000, draft the income tax expense portion of the income statement for 2025, beginning with the line "Income before income taxes." (*Hint:* You must first compute (1) the amount of temporary difference underlying the beginning $5,000,000 deferred tax liability, then (2) the amount of temporary differences originating or reversing during the year, and then (3) the amount of pretax financial income.)

E18.18 (LO 1, 2) (Two Differences, No Beginning Deferred Taxes, Multiple Rates) Teri Hatcher Inc., in its first year of operations, has the following differences between the book basis and tax basis of its assets and liabilities at the end of 2024.

	Book Basis	Tax Basis
Equipment (net)	$400,000	$340,000
Estimated warranty liability	200,000	–0–

It is estimated that the warranty liability will be settled in 2025. The difference in equipment (net) will result in taxable amounts of $20,000 in 2025, $30,000 in 2026, and $10,000 in 2027. The company has taxable income of $520,000 in 2024. As of the beginning of 2024, the enacted tax rate is 34% for 2024–2026, and 30% for 2027. Hatcher expects to report taxable income through 2027.

Instructions

a. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2024.

b. Indicate how deferred income taxes will be reported on the balance sheet at the end of 2024.

E18.19 (LO 1, 2, 4) (Two Temporary Differences, Multiple Rates, Future Taxable Income) Nadal Inc. has two temporary differences at the end of 2024. The first difference stems from installment sales, and the second one results from the accrual of a loss contingency. Nadal's accounting department has developed a schedule of future taxable and deductible amounts related to these temporary differences as follows.

	2025	2026	2027	2028
Taxable amounts	$40,000	$50,000	$60,000	$80,000
Deductible amounts		(15,000)	(19,000)	
	$40,000	$35,000	$41,000	$80,000

As of the beginning of 2024, the enacted tax rate is 34% for 2024 and 2025, and 20% for 2026–2029. At the beginning of 2024, the company had no deferred income taxes on its balance sheet. Taxable income for 2024 is $500,000. Taxable income is expected in all future years.

Instructions

a. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2024.

b. Indicate how deferred income taxes would be classified on the balance sheet at the end of 2024.

E18.20 (LO 1, 2, 4) (Two Differences, One Rate, First Year) The differences between the book basis and tax basis of the assets and liabilities of Castle Corporation at the end of 2024 are presented below.

	Book Basis	Tax Basis
Accounts receivable	$50,000	$–0–
Litigation liability	30,000	–0–

It is estimated that the litigation liability will be settled in 2025. The difference in accounts receivable will result in taxable amounts of $30,000 in 2025 and $20,000 in 2026. The company has taxable income of $350,000 in 2024 and is expected to have taxable income in each of the following 2 years. Its enacted tax rate is 34% for all years. This is the company's first year of operations. The operating cycle of the business is 2 years.

Instructions

a. Prepare the journal entry to record income tax expense, deferred income taxes, and income taxes payable for 2024.

b. Indicate how deferred income taxes will be reported on the balance sheet at the end of 2024.

E18.21 (LO 3) (Carryforward of NOL, No Valuation Account, No Temporary Differences) The pretax financial income (or loss) figures for Jenny Spangler Company are as follows.

2022	$ 80,000
2023	(40,000)
2024	(35,000)
2025	120,000
2026	100,000

Pretax financial income (or loss) and taxable income (loss) were the same for all years involved. Assume a 20% tax rate for all years.

Instructions

Prepare the journal entries for the years 2022 to 2026 to record income tax expense and the effects of the net operating loss carryforwards. All income and losses relate to normal operations. (In recording the benefits of a loss carryforward, assume that no valuation account is deemed necessary.)

E18.22 (LO 3) (Two NOLs, No Temporary Differences, No Valuation Account, Entries and Income Statement) Felicia Rashad Corporation has pretax financial income (or loss) from 2020 through 2026 as follows.

	Income (Loss)	Tax Rate
2020	$ 48,000	25%
2021	(70,000)	20
2022	90,000	20
2023	30,000	20
2024	105,000	20
2025	(60,000)	25
2026	130,000	25

Pretax financial income (loss) and taxable income (loss) were the same for all years since Rashad has been in business. In recording the benefits of a loss carryforward, assume that it is more likely than not that the related benefits will be realized.

Instructions

a. What entry (entries) for income taxes should be recorded for 2021?

b. Indicate what the income tax expense portion of the income statement for 2021 should look like. Assume all income (loss) relates to continuing operations.

c. What entry for income taxes should be recorded in 2022?

d. How should the income tax expense section of the income statement for 2022 appear?

e. What entry for income taxes should be recorded in 2025?

f. How should the income tax expense section of the income statement for 2025 appear?

E18.23 (LO 3) (NOL Carryforward, Valuation Account versus No Valuation Account) Spamela Hamderson Inc. reports the following pretax income (loss) for both financial reporting purposes and tax purposes.

Year	Pretax Income (Loss)	Tax Rate
2023	$120,000	17%
2024	90,000	17
2025	(200,000)	19
2026	300,000	19

The tax rates listed were all enacted by the beginning of 2023.

Instructions

a. Prepare the journal entries for the years 2023–2026 to record income tax expense (benefit) and income taxes payable (refundable) and the tax effects of the loss carryforward, assuming that at the end of 2025 the benefits of the loss carryforward are judged more likely than not to be realized in the future.

b. Using the assumption in (a), prepare the income tax section of the 2025 income statement beginning with the line "Operating loss before income taxes."

c. Prepare the journal entries for 2025 and 2026, assuming that based on the weight of available evidence, it is more likely than not that one-fourth of the benefits of the loss carryforward will not be realized.

d. Using the assumption in (c), prepare the income tax section of the 2025 income statement beginning with the line "Operating loss before income taxes."

E18.24 (LO 3) (NOL Carryforward, Valuation Account Needed) Beilman Inc. reports the following pretax income (loss) for both book and tax purposes.

Year	Pretax Income (Loss)	Tax Rate
2023	$120,000	20%
2024	90,000	20
2025	(80,000)	25
2026	120,000	25

The tax rates listed were all enacted by the beginning of 2023.

Instructions

a. Prepare the journal entries for years 2023–2026 to record income tax expense (benefit) and income taxes payable (refundable), and the tax effects of the loss carryforward, assuming that based on the weight of available evidence, it is more likely than not that one-half of the benefits of the loss carryforward will not be realized.

b. Prepare the income tax section of the 2025 income statement beginning with the line "Operating loss before income taxes."

c. Prepare the income tax section of the 2026 income statement beginning with the line "Income before income taxes."

E18.25 (LO 3) (NOL Carryforward, Valuation Account Needed) Meyer reported the following pretax financial income (loss) for the years 2025–2027.

2025	$120,000
2026	(150,000)
2027	190,000

Pretax financial income (loss) and taxable income (loss) were the same for all years involved. The enacted tax rate was 20% for 2025–2027.

Instructions

a. Prepare the journal entries for the years 2025–2027 to record income tax expense, income taxes payable, and the tax effects of the loss carryforward, assuming that based on the weight of available evidence, it is more likely than not that one-fifth of the benefits of the loss carryforward will not be realized.

b. Prepare the income tax section of the 2026 income statement beginning with the line "Income (loss) before income taxes."

*E18.26 (LO 6) **(Carryback and Carryforward of NOL, No Valuation Account, No Temporary Differences)** The pretax financial income (or loss) figures for Dan Lynch Company are as follows.

2021	$250,000
2022	80,000
2023	(160,000)
2024	(180,000)
2025	140,000
2026	100,000

Pretax financial income (or loss) and taxable income (loss) were the same for all years involved. Assume a 45% tax rate for 2021 and 2022, and a 20% tax rate for the remaining years.

Instructions

Prepare the journal entries for the years 2022 to 2026 to record income tax expense and the effects of the net operating loss carrybacks and carryforwards assuming Dan Lynch Company uses the carryback provision. All income and losses relate to normal operations. (In recording the benefits of a loss carryforward, assume that no valuation account is deemed necessary.)

*E18.27 (LO 6) **(NOL Carryback and Carryforward, Valuation Account Needed)** Wangerin Company reported the following pretax financial income (loss) for the years 2023–2027.

2023	$240,000
2024	350,000
2025	120,000
2026	(570,000)
2027	180,000

Pretax financial income (loss) and taxable income (loss) were the same for all years involved. The enacted tax rate was 34% for 2023 and 2024, and 20% for 2025–2027. Assume the carryback provision is used first for net operating losses.

Instructions

a. Prepare the journal entries for the years 2025–2027 to record income tax expense, income taxes payable (refundable), and the tax effects of the loss carryback and loss carryforward, assuming no valuation allowance is needed.

b. Prepare the income tax section of the 2026 income statement beginning with the line "Income (loss) before income taxes."

Problems

P18.1 (LO 1, 2, 4) Excel **(Three Differences, No Beginning Deferred Taxes, Multiple Rates)** The following information is available for Remmers Corporation for 2025.

1. Depreciation reported on the tax return exceeded depreciation reported on the income statement by $120,000. This difference will reverse in equal amounts of $30,000 over the years 2026–2029.
2. Interest received on municipal bonds was $10,000.
3. Rent collected in advance on January 1, 2025, totaled $60,000 for a 3-year period. Of this amount, $40,000 was reported as unearned at December 31, 2025, for book purposes.
4. The tax rates are 20% for 2025 and 17% for 2026 and subsequent years.
5. Income taxes of $160,000 are due per the tax return for 2025.
6. No deferred taxes existed at the beginning of 2025.

Instructions

a. Compute taxable income for 2025.

b. Compute pretax financial income for 2025.

c. Prepare the journal entries to record income tax expense, deferred income taxes, and income taxes payable for 2025 and 2026. Assume taxable income was $480,000 in 2026.

d. Prepare the income tax expense section of the income statement for 2025, beginning with "Income before income taxes."

P18.2 (LO 1, 2) (One Temporary Difference, Tracked for 4 Years, One Permanent Difference, Change in Rate) The pretax financial income of Truttman Company differs from its taxable income throughout each of 4 years as follows.

Year	Pretax Financial Income	Taxable Income	Tax Rate
2025	$290,000	$180,000	35%
2026	320,000	225,000	20
2027	350,000	260,000	20
2028	420,000	560,000	20

Pretax financial income for each year includes a nondeductible expense of $30,000 (never deductible for tax purposes). The remainder of the difference between pretax financial income and taxable income in each period is due to one depreciation temporary difference. No deferred income taxes existed at the beginning of 2025.

Instructions

a. Prepare journal entries to record income taxes in all 4 years. Assume that the change in the tax rate to 20% was not enacted until the beginning of 2026.

b. Prepare the income statement for 2026, beginning with Income before income taxes.

P18.3 (LO 1, 2, 4) (Second Year of Depreciation Difference, Two Differences, Single Rate, Discontinued Operation) The following information has been obtained for Gocker Corporation.

1. Prior to 2025, taxable income and pretax financial income were identical.
2. Pretax financial income is $1,700,000 in 2025 and $1,400,000 in 2026.
3. On January 1, 2025, equipment costing $1,200,000 is purchased. It is to be depreciated on a straight-line basis over 5 years for tax purposes and over 8 years for financial reporting purposes. (*Hint:* Use the half-year convention for tax purposes, as discussed in Appendix 10A.)
4. Interest of $60,000 was earned on tax-exempt municipal obligations in 2026.
5. Included in 2026 pretax financial income is a gain on discontinued operations of $200,000, which is fully taxable.
6. The tax rate is 20% for all periods.
7. Taxable income is expected in all future years.

Instructions

a. Compute taxable income and income taxes payable for 2026.

b. Prepare the journal entry to record 2026 income tax expense, income taxes payable, and deferred taxes.

c. Prepare the bottom portion of Gocker's 2026 income statement, beginning with "Income from continuing operations before income taxes."

d. Indicate how deferred income taxes should be presented on the December 31, 2026, balance sheet.

P18.4 (LO 1, 2) (Permanent and Temporary Differences, One Rate) The accounting records of Shinault Inc. show the following data for 2025 (its first year of operations).

1. Life insurance expense on officers was $9,000.
2. Equipment was acquired in early January for $300,000. Straight-line depreciation over a 5-year life is used, with no salvage value. For tax purposes, Shinault used a 30% rate to calculate depreciation.
3. Interest revenue on State of New York bonds totaled $4,000.
4. Product warranties were estimated to be $50,000 in 2025. Actual repair and labor costs related to the warranties in 2025 were $10,000. The remainder is estimated to be paid evenly in 2026 and 2027.
5. Gross profit on an accrual basis was $100,000. For tax purposes, $75,000 was recorded on the installment-sales method.
6. Fines incurred for pollution violations were $4,200.
7. Pretax financial income was $750,000. The tax rate is 30%.

Instructions

a. Prepare a schedule starting with pretax financial income in 2025 and ending with taxable income in 2025.

b. Prepare the journal entry for 2025 to record income taxes payable, income tax expense, and deferred income taxes.

P18.5 (LO 3) Excel Groupwork (NOL without Valuation Account) Jennings Inc. reported the following pretax income (loss) and related tax rates during the years 2024–2027.

	Pretax Income (Loss)	Tax Rate
2024	$ 80,000	40%
2025	(180,000)	40%
2026	230,000	20%
2027	100,000	20%

Pretax financial income (loss) and taxable income (loss) were the same for all years since Jennings began business. The tax rates from 2024–2027 were enacted in 2024.

Instructions

a. Prepare the journal entries for the years 2025–2027 to record income taxes payable (refundable), income tax expense (benefit), and the tax effects of the loss carryforward. Assume that Jennings expects to realize the benefits of any loss carryforward in the year that immediately follows the loss year.

b. Indicate the effect the 2025 entry (entries) has on the December 31, 2025, balance sheet.

c. Prepare the portion of the income statement, starting with "Operating loss before income taxes," for 2025.

d. Prepare the portion of the income statement, starting with "Income before income taxes," for 2026.

P18.6 (LO 1, 4) (Two Differences, Two Rates, Future Income Expected) Presented below are two independent situations related to future taxable and deductible amounts resulting from temporary differences existing at December 31, 2025.

1. Mooney Co. has developed the following schedule of future taxable and deductible amounts.

	2026	2027	2028	2029	2030
Taxable amounts	$300	$300	$300	$ 300	$300
Deductible amount	—	—	—	(1,600)	—

2. Roesch Co. has the following schedule of future taxable and deductible amounts.

	2026	2027	2028	2029
Taxable amounts	$300	$300	$ 300	$300
Deductible amount	—	—	(2,300)	—

Both Mooney Co. and Roesch Co. have taxable income of $4,000 in 2025 and expect to have taxable income in all future years. The tax rates enacted as of the beginning of 2025 are 30% for 2025–2028 and 35% for years thereafter. All of the underlying temporary differences relate to noncurrent assets and liabilities.

Instructions

For each of these two situations, compute the net amount of deferred income taxes to be reported at the end of 2025, and indicate how it should be classified on the balance sheet.

P18.7 (LO 1, 2, 4) Groupwork (One Temporary Difference, Tracked 3 Years, Change in Rates, Income Statement Presentation) Crosley Corp. sold an investment on an installment basis. The total gain of $60,000 was reported for financial reporting purposes in the period of sale. The company qualifies to use the installment-sales method for tax purposes. The installment period is 3 years; one-third of the sale price is collected in the period of sale. The tax rate was 40% in 2025, and 20% in 2026 and 2027. The 20% tax rate was not enacted in law until 2026. The accounting and tax data for the 3 years is shown below.

	Financial Accounting	Tax Return
2025 (40% tax rate)		
Income before temporary difference	$ 70,000	$70,000
Temporary difference	60,000	20,000
Income	$130,000	$90,000
2026 (20% tax rate)		
Income before temporary difference	$ 70,000	$70,000
Temporary difference	–0–	20,000
Income	$ 70,000	$90,000
2027 (20% tax rate)		
Income before temporary difference	$ 70,000	$70,000
Temporary difference	–0–	20,000
Income	$ 70,000	$90,000

Instructions

a. Prepare the journal entries to record the income tax expense, deferred income taxes, and the income taxes payable at the end of each year. No deferred income taxes existed at the beginning of 2025.

b. Explain how the deferred taxes will appear on the balance sheet at the end of each year.

c. Draft the income tax expense section of the income statement for each year, beginning with "Income before income taxes."

P18.8 (LO 1, 2, 4) (Two Differences, 2 Years, Compute Taxable Income and Pretax Financial Income) The following information was disclosed during the audit of Elbert Inc.

1.

Year	Amount Due per Tax Return
2025	$130,000
2026	104,000

2. On January 1, 2025, equipment costing $600,000 is purchased. For financial reporting purposes, the company uses straight-line depreciation over a 5-year life. For tax purposes, the company uses the elective straight-line method over a 5-year life. (*Hint:* For tax purposes, the half-year convention as discussed in Appendix 10A must be used.)

3. In January 2026, $225,000 is collected in advance rental of a building for a 3-year period. The entire $225,000 is reported as taxable income in 2026, but $150,000 of the $225,000 is reported as unearned revenue in 2026 for financial reporting purposes. The remaining amount of unearned revenue is to be recognized equally in 2027 and 2028.

4. The tax rate is 20% in 2025 and all subsequent periods. (*Hint:* To find taxable income in 2025 and 2026, the related income taxes payable amounts will have to be "grossed up.")

5. No temporary differences existed at the end of 2024. Elbert expects to report taxable income in each of the next 5 years.

Instructions

a. Determine the amount to report for deferred income taxes at the end of 2025, and indicate how it should be classified on the balance sheet.

b. Prepare the journal entry to record income taxes for 2025.

c. Draft the income tax section of the income statement for 2025, beginning with "Income before income taxes." (*Hint:* You must compute taxable income and then combine that with changes in cumulative temporary differences to arrive at pretax financial income.)

d. Determine the deferred income taxes at the end of 2026, and indicate how they should be classified on the balance sheet.

e. Prepare the journal entry to record income taxes for 2026.

f. Draft the income tax section of the income statement for 2026, beginning with "Income before income taxes."

P18.9 (LO 1, 2, 4) Groupwork (Five Differences, Compute Taxable Income and Deferred Taxes, Draft Income Statement) Wise Company began operations at the beginning of 2026. The following information pertains to this company.

1. Pretax financial income for 2026 is $100,000.

2. The tax rate enacted for 2026 and future years is 20%.

3. Differences between the 2026 income statement and tax return are listed below:

a. Warranty expense accrued for financial reporting purposes amounts to $7,000. Warranty deductions per the tax return amount to $2,000.

b. Gross profit on construction contracts using the percentage-of-completion method per books amounts to $92,000. Gross profit on construction contracts for tax purposes amounts to $67,000.

c. Depreciation of property, plant, and equipment for financial reporting purposes amounts to $60,000. Depreciation of these assets amounts to $80,000 for the tax return.

d. A $3,500 fine paid for violation of pollution laws was deducted in computing pretax financial income.

e. Interest revenue recognized on an investment in tax-exempt municipal bonds amounts to $1,500.

4. Taxable income is expected for the next few years. (Assume (a) is short-term in nature; assume (b) and (c) are long-term in nature.)

Instructions

a. Compute taxable income for 2026.

b. Compute the deferred taxes at December 31, 2026, that relate to the temporary differences described above. Clearly label them as deferred tax asset or liability.

c. Prepare the journal entry to record income tax expense, deferred taxes, and income taxes payable for 2026.

d. Draft the income tax expense section of the income statement, beginning with "Income before income taxes."

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ18.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What amounts relative to income taxes does P&G report in its:

1. 2020 income statement?

2. June 30, 2020, balance sheet?

3. 2020 statement of cash flows?

b. P&G's income taxes in 2018, 2019, and 2020 were computed at what effective tax rates? (See the notes to the financial statements.)

c. How much of P&G's 2020 total income taxes was current tax expense, and how much was deferred tax expense?

d. What did P&G report as the significant components (the details) of its June 30, 2020, deferred tax assets and liabilities?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ18.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What are the amounts of Coca-Cola's and PepsiCo's provision for income taxes for the year 2020? Of each company's 2020 provision for income taxes, what portion is current expense and what portion is deferred expense?

b. What amount of cash was paid in 2020 for income taxes by Coca-Cola and by PepsiCo?

c. What was the U.S. federal statutory tax rate in 2020? What was the effective tax rate in 2020 for Coca-Cola and PepsiCo? Why might their effective tax rates differ?

d. For year-end 2020, what amounts were reported by Coca-Cola and PepsiCo as (1) gross deferred tax assets and (2) gross deferred tax liabilities?

e. Do either Coca-Cola or PepsiCo disclose any net operating loss carrybacks and/or carryforwards at year-end 2020? What are the amounts, and when do the carryforwards expire?

Financial Statement Analysis Case: Homestake Mining Company

UYJ18.3 **Homestake Mining Company** is a 120-year-old international gold mining company with substantial gold mining operations and exploration in the United States, Canada, and

Australia. At year-end, Homestake reported the following items related to income taxes (thousands of dollars).

Total current taxes	$ 26,349
Total deferred taxes	(39,436)
Total income and mining taxes (the provision for taxes per its income statement)	$ (13,087)
Deferred tax liabilities	$303,050
Deferred tax assets, net of valuation allowance of $207,175	95,275
Net deferred tax liability	$207,775

Note 6: The classification of deferred tax assets and liabilities is based on the related asset or liability creating the deferred tax. Deferred taxes not related to a specific asset or liability are classified based on the estimated period of reversal.

Tax loss carryforwards (U.S., Canada, Australia, and Chile)	$71,151
Tax credit carryforwards	12,007

Instructions

a. What is the significance of Homestake's disclosure of "Current taxes" of $26,349 and "Deferred taxes" of $(39,436)?

b. Explain the concept behind Homestake's disclosure of gross deferred tax liabilities (future taxable amounts) and gross deferred tax assets (future deductible amounts).

c. Homestake reported tax loss carryforwards of $71,151 and tax credit carryforwards of $12,007. How do the carryforward provisions affect the reporting of deferred tax assets and deferred tax liabilities?

Accounting, Analysis, and Principles

UYJ18.4 DeJohn Company, which began operations at the beginning of 2023, produces various products on a contract basis. Each contract generates a gross profit of $80,000. Some of DeJohn's contracts provide for the customer to pay on an installment basis. Under these contracts, DeJohn collects one-fifth of the contract revenue in each of the following 4 years. For financial reporting purposes, the company recognizes gross profit in the year of completion (accrual basis). For tax purposes, DeJohn recognizes gross profit in the year cash is collected (installment basis).

Presented below is information related to DeJohn's operations for 2025:

1. In 2025, the company completed seven contracts that allow for the customer to pay on an installment basis. DeJohn recognized the related gross profit of $560,000 for financial reporting purposes. It reported only $112,000 of gross profit on installment sales on the 2025 tax return. The company expects future collections on the related installment receivables to result in taxable amounts of $112,000 in each of the next 4 years.
2. In 2025, nontaxable municipal bond interest revenue was $28,000.
3. During 2025, nondeductible fines and penalties of $26,000 were paid.
4. Pretax financial income for 2025 amounts to $500,000.
5. Tax rates (enacted before the end of 2025) are 30% for 2025 and 20% for 2026 and later.
6. The accounting period is the calendar year.
7. The company is expected to have taxable income in all future years.
8. The company has no deferred tax assets or liabilities at the end of 2024.

Accounting

Prepare the journal entry to record income taxes for 2025.

Analysis

Classify deferred income taxes on the balance sheet at December 31, 2025, and indicate, starting with the line "Income before income taxes," how income taxes are reported on the income statement. What is DeJohn's effective tax rate?

Principles

Explain how the conceptual framework is used as a basis for determining the proper accounting for deferred income taxes.

Developing Your Professional Skills

Critical-Thinking Cases

CT18.1 (LO 1) Writing (Objectives and Principles for Accounting for Income Taxes) The amount of income taxes due to the government for a period of time is rarely the amount reported on the income statement for that period as income tax expense.

Instructions

a. Explain the objectives of accounting for income taxes in general-purpose financial statements.

b. Explain the basic principles that are applied in accounting for income taxes at the date of the financial statements to meet the objectives discussed in (a).

c. List the steps in the annual computation of deferred tax liabilities and assets.

CT18.2 (LO 1) Writing (Basic Accounting for Temporary Differences) Dexter Company appropriately uses the asset-liability method to record deferred income taxes. Dexter reports depreciation expense for certain machinery purchased this year using the modified accelerated cost recovery system (MACRS) for income tax purposes and the straight-line basis for financial reporting purposes. The tax deduction is the larger amount this year.

Dexter received rent revenues in advance this year. These revenues are included in this year's taxable income. However, for financial reporting purposes, these revenues are reported as unearned revenues, a current liability.

Instructions

a. What are the principles of the asset-liability approach?

b. How would Dexter account for the temporary differences?

c. How should Dexter classify the deferred tax consequences of the temporary differences on its balance sheet?

CT18.3 (LO 1, 2) (Identify Temporary Differences and Classification Criteria) The asset-liability approach for recording deferred income taxes is an integral part of generally accepted accounting principles.

Instructions

a. Indicate whether each of the following independent situations should be treated as a temporary difference or as a permanent difference, and explain why.

1. Estimated warranty costs (covering a 3-year warranty) are expensed for financial reporting purposes at the time of sale but deducted for income tax purposes when paid.

2. Depreciation for book and income tax purposes differs because of different bases of carrying the related property, which was acquired in a trade-in. The different bases are a result of different rules used for book and tax purposes to compute the basis of property acquired in a trade-in.

3. A company properly uses the equity method to account for its 30% investment in another company. The investee pays dividends that are about 10% of its annual earnings.

4. A company reports a gain on an involuntary conversion of a nonmonetary asset to a monetary asset. The company elects to replace the property within the statutory period using the total proceeds so the gain is not reported on the current year's tax return.

b. Discuss the nature of the deferred income tax accounts and the manner in which these accounts are to be reported on the balance sheet.

CT18.4 (LO 1, 2) (Accounting and Classification of Deferred Income Taxes)

Part A: This year, Gumowski Company has each of the following items in its income statement.

1. Gross profits on installment sales.

2. Revenues on long-term construction contracts.

3. Estimated costs of product warranty contracts.

4. Premiums on officers' life insurance policies with Gumowski as beneficiary.

Instructions

a. Indicate where deferred income taxes are reported in the financial statements.

b. Specify when deferred income taxes would need to be recognized for each of the items above, and indicate the rationale for such recognition.

Part B: Gumowski Company's president has heard that deferred income taxes can be classified in different ways in the balance sheet.

Instructions

Identify the conditions under which deferred income taxes would be classified as a noncurrent item in the balance sheet. What justification exists for such classification?

(AICPA adapted)

CT18.5 (LO 1, 2) (Explain Computation of Deferred Tax Liability for Multiple Tax Rates) At December 31, 2025, Higley Corporation has one temporary difference which will reverse and cause taxable amounts in 2026. In 2025, a new tax act set taxes equal to 35% for 2025, 30% for 2026, and 20% for 2027 and years thereafter.

Instructions

Explain what circumstances would call for Higley to compute its deferred tax liability at the end of 2025 by multiplying the cumulative temporary difference by:

a. 35%.

b. 30%.

c. 20%.

CT18.6 (LO 1, 2, 3) (Explain Future Taxable and Deductible Amounts, How Carryforward Affects Deferred Taxes) Maria Rodriquez and Lynette Kingston are discussing accounting for income taxes. They are currently studying a schedule of taxable and deductible amounts that will arise in the future as a result of existing temporary differences. The schedule is as follows.

	Future Years				
	2025	**2026**	**2027**	**2028**	**2029**
Taxable income	$850,000				
Taxable amounts		$375,000	$375,000	$375,000	$375,000
Deductible amounts				(2,400,000)	
Enacted tax rate	50%	45%	40%	35%	30%

Instructions

a. Explain the concept of future taxable amounts and future deductible amounts as illustrated in the schedule.

b. How does the carryforward provision affect the reporting of deferred tax assets and deferred tax liabilities?

CT18.7 (LO 1, 2) Ethics (Deferred Taxes, Income Effects) Stephanie Delaney, CPA, is the newly hired director of corporate taxation for Acme Incorporated, which is a publicly traded corporation. Ms. Delaney's first job with Acme was the review of the company's accounting practices on deferred income taxes. In doing her review, she noted differences between tax and book depreciation methods that permitted Acme to realize a sizable deferred tax liability on its balance sheet. As a result, Acme paid very little in income taxes at that time.

Delaney also discovered that Acme has an explicit policy of selling off plant assets before they reversed in the deferred tax liability account. This policy, coupled with the rapid expansion of its plant asset base, allowed Acme to "defer" all income taxes payable for several years, even though it always has reported positive earnings and an increasing EPS. Delaney checked with the legal department and found the policy to be legal, but she's uncomfortable with the ethics of it.

Instructions

Answer the following questions.

a. Why would Acme have an explicit policy of selling plant assets before the temporary differences reversed in the deferred tax liability account?

b. What are the ethical implications of Acme's "deferral" of income taxes?

c. Who could be harmed by Acme's ability to "defer" income taxes payable for several years, despite positive earnings?

d. In a situation such as this, what are Ms. Delaney's professional responsibilities as a CPA?

FASB Codification References

[1] FASB ASC 740-10-45-4. [Predecessor literature: "Accounting for Income Taxes," *Statement of Financial Accounting Standard No. 109* (Norwalk, Conn.: FASB, 1992)].
[2] FASB ASC 740-10-30-18. [Predecessor literature: "Accounting for Income Taxes," *Statement of Financial Accounting Standards No. 109* (Norwalk, Conn.: FASB, 1992).]
[3] FASB ASC 740-10-30-21 & 22. [Predecessor literature: "Accounting for Income Taxes," *Statement of Financial Accounting Standards No. 109* (Norwalk, Conn.: FASB, 1992), paras. 23 and 24.]
[4] FASB ASC 740-10-25-6. [Predecessor literature: "Accounting for Uncertainty in Income Taxes," *FASB Interpretation No. 48* (Norwalk, Conn.: FASB, 2006).]
[5] FASB ASC 740-10-05. [Predecessor literature: "Accounting for Income Taxes," *Statement of Financial Accounting Standards No. 109* (Norwalk, Conn.: FASB, 1992), paras. 6 and 8.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE18.1 Access the glossary ("Master Glossary") to answer the following.

a. What is a deferred tax asset?

b. What is taxable income?

c. What is the definition of valuation allowance?

d. What is a deferred tax liability?

CE18.2 What are the two basic requirements applied to the measurement of current and deferred income taxes at the date of the financial statements?

CE18.3 A company wishes to conduct business in a foreign country that attracts businesses by granting "holidays" from income taxes for a certain period of time. Would the company have to disclose this "holiday" to the SEC? If so, what information must be disclosed?

CE18.4 When is a company allowed to initially recognize the financial statement effects of a tax position?

Codification Research Case

Kleckner Company started operations in 2021. Although it has grown steadily, the company reported accumulated operating losses of $450,000 in its first 4 years in business. In the most recent year (2025), Kleckner appears to have turned the corner and reported modest taxable income of $30,000. In addition to a deferred tax asset related to its net operating loss, Kleckner has recorded a deferred tax asset related to product warranties and a deferred tax liability related to accelerated depreciation.

Given its past operating results, Kleckner has established a full valuation allowance for its deferred tax assets. However, given its improved performance, Kleckner management wonders whether the company can now reduce or eliminate the valuation allowance. They would like you to conduct some research on the accounting for its valuation allowance.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Briefly explain to Kleckner management the importance of future taxable income as it relates to the valuation allowance for deferred tax assets.

b. What are the sources of income that may be relied upon to remove the need for a valuation allowance?

c. What are tax-planning strategies? From the information provided, does it appear that Kleckner could employ a tax-planning strategy to support reducing its valuation allowance?

Additional Professional Resources

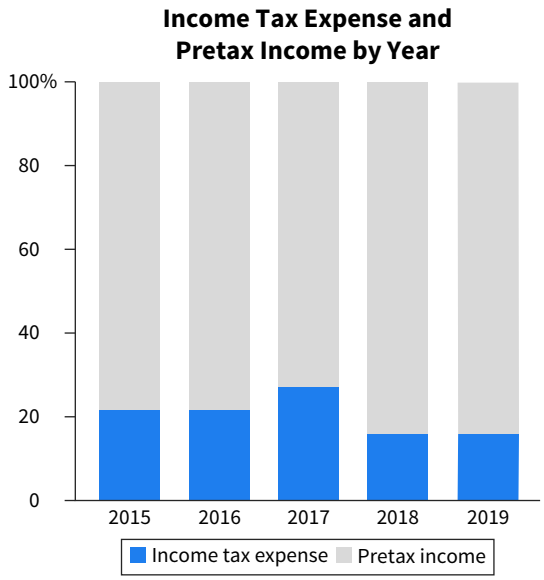
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Are All Data Visualizations Created Equal?

DA18.1 Data visualizations can be a great way to help us make sense of the complexities surrounding income taxes. Bringing together data on pretax income, effective tax rate, and tax expense can offer insights on taxes over time, across industries, and across different types of transactions.

However, not all data visualizations are created equal. Choosing which data to include in each visualization and how to present the data is important to ensure that the visualizations tell the true story. It is also important to understand the question we are trying to answer and how that visualization might help us answer it. For example, the following visualization shows a 100% stacked bar chart for income tax expense and pretax income. While tax expense and pretax income are related, they are not components of a larger total. As a result, a graph such as this may not be relevant.



Required

Using a dashboard of visualizations, you will explain which chart best shows the relationship between the average effective tax rate and average effective income tax expense of public companies.

Go to Wiley Course Resources for complete details and instructions.

DA18.2 Using visualizations requires not only an understanding of the accounting topic, such as taxes, but also an understanding of the insights we can draw from a particular visualization.

Required

Using a visualization comparing pretax income and income tax expense for several public companies across a 5-year period, you are asked to identify which year had the greatest total income tax expense and explain why.

Go to Wiley Course Resources for complete details and instructions.

DA18.3 Visualizations are a useful tool when digging into detailed data such as tax rates by industry.

Required

You will be given a visualization comparing average pretax income and tax expense for companies within 15 different industry categories over a 5-year period. Using the graphs provided, as well as what you have learned about accounting for income taxes, you are asked to explain why a particular industry group has the lowest effective tax rate in most years.

Go to Wiley Course Resources for complete details and instructions.

Using Data Analytics to Understand Tax Rates

DA18.4 There is a high level of interest in the tax paid by companies from both investors as well as other groups that focus on whether companies are acting in an equitable manner. As a result, there is interest in comparing tax amounts and rates both between firms as well as between industries and across time. The SEC provides financial statement data sets from the financial reports filed by public companies. We can use this data to gain insights on the taxes paid by different companies.

Required

Using financial statement data from over 600 public companies over a 5-year period, you will use Excel to organize, clean, and summarize the data. Using your summarized data, you will answer questions about the effective tax rates across time for companies in different industries.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 7

Compare the accounting for income taxes under GAAP and IFRS.

The accounting for income taxes in IFRS is covered in *IAS 12* ("Income Taxes"), which is based on an asset-liability approach to measurement of deferred taxes. Following are the key similarities and differences between GAAP and IFRS related to accounting for taxes.

Similarities

- Similar to GAAP, IFRS uses the asset and liability approach for recording deferred taxes.
- The classification of deferred taxes under both IFRS and GAAP is always non-current.

Differences

- Under IFRS, an affirmative judgment approach is used, by which a deferred tax asset is recognized up to the amount that is probable to be realized. GAAP uses an impairment approach. In this approach, the deferred tax asset is recognized in full. It is then reduced by a valuation account if it is more likely than not that all or a portion of the deferred tax asset will not be realized.
- IFRS uses the enacted tax rate or substantially enacted tax rate. ("Substantially enacted" means virtually certain.) For GAAP, the enacted tax rate must be used.
- The tax effects related to certain items are reported in equity under IFRS. That is not the case under GAAP, which charges or credits the tax effects to income.
- GAAP requires companies to assess the likelihood of uncertain tax positions being sustainable upon audit. Potential liabilities must be accrued and disclosed if the position is "more likely than not" to be disallowed. Under IFRS, all potential liabilities must be recognized. With respect to measurement, IFRS uses an expected-value approach to measure the tax liability, which differs from GAAP.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 19

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Accounting for Pensions and Postretirement Benefits

WHAT are pensions and postretirement benefits?

Pensions and postretirement benefits are forms of deferred compensation. In a pension, as part of your compensation for work performed today, your employer sets aside funds that will be paid to you in retirement. In the case of postretirement benefits, the funds are set aside to cover the costs of healthcare (medical, dental, eyecare) and other expenses that arise in retirement. As you will learn, both employers and employees view these benefits favorably because of tax incentives. Employers receive a tax deduction related to contributions to these plans. Contributions by both employers and employees into a pension fund grow tax-free until received in retirement (usually taxed at a lower rate).

WHY is information about pensions and postretirement benefits important?

Generally, when an employer sets up a pension plan, it makes a promise to the employees to pay pension benefits in the future. From an accounting perspective, this promise meets the definition of a liability. In addition, companies must record pension expense as employees work and earn pension benefits. Investors need information on the magnitude of these liabilities as well as the cost of providing these benefits.

This is especially true when you consider the size of these obligations. The following table summarizes pension obligations, pension assets, and pension expense for five major companies (dollars in millions).

Company	Pension Obligation	Pension Assets	Funded Status	Pension Expense as % of Pretax Income (Loss)
General Motors (GM)	$87,275	$74,923	85.85%	−12.64%*
Merck	27,147	24,721	91.06	5.16
Deere & Company	14,845	14,574	98.17	3.68
Hewlett-Packard	13,008	14,127	108.60	10.18
Molson Coors	5,572	5,958	106.93	4.88

*General Motors reported pension income (negative expense).

What is apparent from the information in the table is the magnitude of pension obligations and assets (these are billions of dollars) and that pension expense (income) is a substantial percentage of total pretax income for many companies. Given these data, investors and creditors need information on pensions to assess their impact on companies' financial positions and operating results, and potential effects on future cash flows. For example, **GM**'s funded status (approximately 86%) indicates its pension plan is underfunded (plan assets are less than the pension liability). Investors and creditors will want to understand how GM and other companies with underfunded plans will close that gap.

HOW do we account for pensions and postretirement benefits?

The accounting for pensions and postretirement benefits begins with measuring the liability, which is the present value of expected future cash flows related to the payments a company promises to pay its employees in retirement. Under pension laws, companies must set aside assets, which will be used to meet the obligations to employees in the future. On the balance sheet, companies report the net pension asset or liability, defined as the difference between the liability and fair value of the assets.

When the liability exceeds the assets, we say the pension is underfunded (see GM, **Deere**, and **Merck** in the table above). An overfunded plan (see **Hewlett-Packard** and **Molson Coors** above) is one in which pension assets exceed the pension liability. The expense recognized each period measures the increase in the pension liability, as employees work and earn more benefits. The liability is controversial because its measurement and recognition relate to unknown future variables. Therefore, the accounting issues related to pensions can be complex. The accounting for postretirement benefit plans (discussed In Appendix 19A) is similar to the accounting for pensions.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 19.1 Discuss the fundamentals of pension plan accounting.	**19.1 Fundamentals of Pension Plan Accounting** • Pension plans • Role of actuaries • Measures of the liability • Components of pension expense	Examples **19.1** Defined Contribution Plan **19.2** Funded Status of Plan **19.3** Return on Plan Assets Put It into Practice LO 19.1 Determine Pension Components
LO 19.2 Use a worksheet for employer's pension plan entries.	**19.2 Using a Pension Worksheet** • Funded status	Examples **19.4** 2025 Entries and Worksheet Put It into Practice LO 19.2 Prepare a Pension Worksheet
LO 19.3 Describe the accounting and amortization of prior service costs.	**19.3 Prior Service Cost (PSC)** • Amortization • Funded status—2026	Examples **19.5** Years-of-Service Amortization **19.6** 2026 Entries and Worksheet Put It into Practice LO 19.3 Prepare Worksheet for Prior Service Costs
LO 19.4 Explain the accounting and amortization for unexpected gains and losses.	**19.4 Gains and Losses** • Smoothing unexpected gains and losses (assets) • Smoothing unexpected gains and losses (liabilities) • Corridor amortization • Funded status—2027	Examples **19.7** Asset Gain/Loss **19.8** Amortization **19.9** 2027 Worksheet Put It into Practice LO 19.4 Prepare 2028 Pension Worksheet
LO 19.5 Describe the requirements for reporting pension plans in financial statements.	**19.5 Reporting Pension Plans in Financial Statements** • Assets and liabilities • Net income • Comprehensive income • Note disclosure • Special issues	Put It into Practice LO 19.5 Prepare Worksheet, Journal Entry, and Financial Statements

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

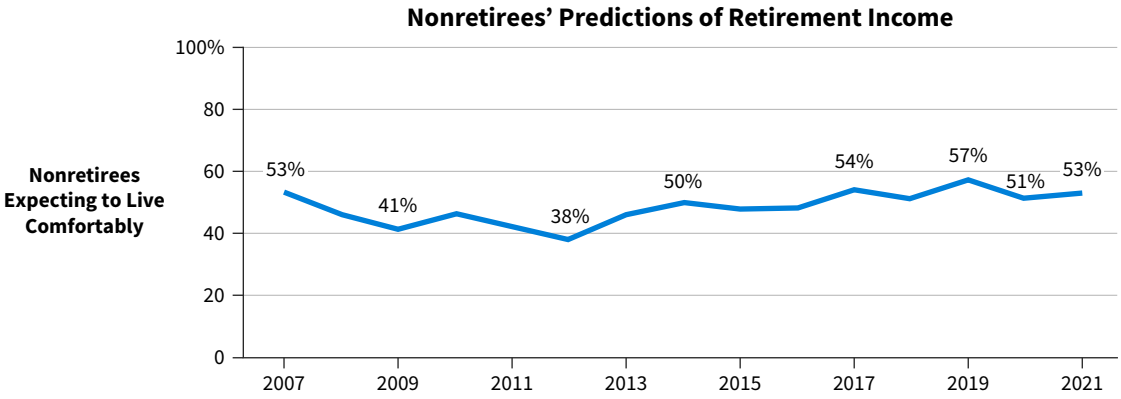
19.1 Fundamentals of Pension Plan Accounting

LEARNING OBJECTIVE 1

Discuss the fundamentals of pension plan accounting.

Have you given any thought to whether you can live comfortably in retirement? Probably not. That is understandable, as retirement is likely many years away for you. You probably have more immediate concerns, such as your accounting exam next week. Furthermore, isn't Social Security there to ensure a comfortable retirement? Also, don't all employers provide a pension plan as part of the benefit package to help you build a retirement nest egg? Maybe. So, when you do retire, do you think you will have enough money to live comfortably? **Illustration 19.1** shows how nonretired adults answered that question.

ILLUSTRATION 19.1 Survey on Comfortable Retirement



As indicated, prior to 2008, a little over 50% nonretired Americans consistently thought they would be able to live comfortably in retirement. This dropped to 46% during the U.S. recession in 2008 and stayed below 50% until 2014. Most recent data indicate that just over 50% of nonretirees thought they would have enough money to live comfortably in retirement (just over 53% in 2021). Why the pessimism?

1. General economic conditions affect how Americans look at retirement. Americans are generally more positive about retirement when the economy is growing.
2. The continuing political discussion about the fragility of the federal Social Security and Medicare programs may reduce nonretired Americans' comfort with projections of their monetary resources in their retirement.
3. While many companies have benefit plans that promise income and other benefits to retired employees in exchange for services during their working years, a shift is on from traditional defined benefit plans, in which employers bear the risk of meeting the benefit promises, to plans in which employees bear more of the risk. In some cases, employers are dropping retirement plans altogether.[1]

This means that retirement accounts, including individual retirement accounts (IRAs) and defined contribution pensions such as 401(k) plans, will need to become a bigger piece of the pie to fill the gap left by smaller government and employer-sponsored benefits.

[1]J. Mauldin, "Angst in America, Part 4: Disappearing Pensions," *Thoughts for the Frontline* (April 16, 2017); and M. Brennan, "U.S. Retirees' Experience Differs from Nonretirees' Outlook," *Gallup* (May 18, 2021).

What does this mean for you? You need to start now with a personal savings strategy to ensure an adequate nest egg at your retirement. So maybe you should spend some time thinking about that far-off-into-the-future retirement. Your study in this chapter of types of pension plans and their accounting will be a good start.

Pension Plans

A **pension plan** is an arrangement whereby an employer provides benefits (payments) to retired employees for services they provided in their working years. Pension accounting may be divided and separately treated as **accounting for the employer** and **accounting for the pension fund**.

- The **company or employer** is the organization sponsoring the pension plan. It incurs the cost and makes contributions to the pension fund.
- The **fund or plan** is the entity that receives the contributions from the employer, administers the pension assets, and makes the benefit payments to the retired employees (pension recipients).

Illustration 19.2 shows the three entities involved in a pension plan and indicates the flow of cash among them.

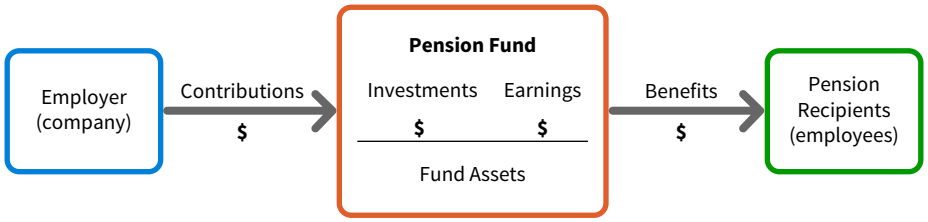


ILLUSTRATION 19.2 Flow of Cash Among Pension Plan Participants

A pension plan is **funded** when the employer makes payments to a funding agency.[2] That agency accumulates the assets of the pension fund and makes payments to the recipients as the benefits come due. Pension plans can be contributory or noncontributory as follows.

- **Contributory.** The employees bear part of the cost of the stated benefits or voluntarily contribute payments to increase their future benefits.
- **Noncontributory.** The employer bears the entire cost.

Companies generally design their pension plans to take advantage of federal income tax benefits. Plans that offer tax benefits are called **qualified pension plans**. They permit **deductibility of the employer's contributions to the pension fund and tax-free status of earnings from pension fund assets**.

The pension fund is a separate legal and accounting entity. The pension fund, as a separate entity, maintains a set of books and prepares financial statements. Maintaining records and preparing financial statements for the fund, an activity known as "accounting for employee benefit plans," is not the subject of this chapter.[3] Instead, this chapter explains the pension accounting and reporting problems **of the employer** as the sponsor of a pension plan.

The two most common types of pension plans are **defined contribution plans** and **defined benefit plans**. We look at each of them in the following sections.

Defined Contribution Plan

In a **defined contribution plan**, the employer agrees to contribute to a pension trust a certain sum each period, based on a formula. This formula may consider such factors as age, length of employee service, employer's profits, and compensation level. **The plan defines only the employer's contribution.** It makes no promise regarding the ultimate benefits paid out to the employees. A common form of this plan is a **401(k) plan**.

[2]When used as a verb, **fund** means to pay to a funding agency (as to fund future pension benefits or to fund pension cost). Used as a noun, it refers to assets accumulated in the hands of a funding agency (trustee) for the purpose of meeting pension benefits when they become due.

[3]The FASB issued separate guidance covering the accounting and reporting for employee benefit plans. [1] (See the FASB Codification References near the end of the chapter.)

The size of the pension benefits that the employee finally collects under the plan depends on several factors: the amounts originally contributed to the pension trust, the income accumulated in the trust, and the treatment of forfeitures of funds caused by early terminations of other employees. A company usually turns over to an **independent third-party trustee** the amounts originally contributed. The trustee, acting on behalf of the beneficiaries (the participating employees), assumes ownership of the pension assets and is accountable for their investment and distribution. The trust is separate and distinct from the employer.

The accounting for a defined contribution plan is straightforward.

- The employee gets the benefit of gain (or the risk of loss) from the assets contributed to the pension plan.
- The employer simply contributes each year based on the formula established in the plan. As a result, the employer's annual cost (pension expense) is simply the amount that it is obligated to contribute to the pension trust.

Example 19.1 Defined Contribution Plan

FACTS Murphy Company sponsors a defined contribution plan for all of its full-time employees that is administered by **Fidelity**. Under the terms of the plan, Murphy contributes at least 1.25% of its pretax operating income to the plan each year. On December 31, 2025, Murphy reported pretax operating income of $2,480,000, therefore, Murphy made a contribution to the plan of $31,000.

QUESTIONS (a) What entry would you make to record pension expense for Murphy's defined contribution plan at December 31, 2025? (b) Does Murphy have a liability on its balance sheet related to the plan? Explain.

SOLUTION

a. Murphy records its contribution to the pension plan as follows.

December 31, 2025		
Pension Expense	31,000	
Cash		31,000

b. Murphy does not have a liability related to its pension plan. As long as it contributes at least $31,000 ($2,480,000 × .0125), it has satisfied its obligation to the plan. Employers sometimes contribute beyond the minimum required in years of good profitability.

As indicated in Example 19.1, the employer reports a liability on its balance sheet only if it does not make the contribution in full. The employer reports an asset only if it contributes more than the required amount.

In addition to pension expense, the employer must disclose the following for a defined contribution plan: a plan description, including employee groups covered; the basis for determining contributions; and the nature and effect of significant matters affecting comparability from period to period. [2]

Defined Benefit Plan

A **defined benefit plan** outlines the benefits that employees will receive when they retire. These benefits typically are a function of an employee's years of service and of the compensation level in the years approaching retirement.

To meet the defined benefit commitments that will arise at retirement, a company must determine what the contribution should be today (a time value of money computation). Companies may use many different contribution approaches. However, the funding method should provide enough money at retirement to meet the benefits defined by the plan.

The **employees** are the beneficiaries of a defined **contribution** trust, but the **employer** is the beneficiary of a defined **benefit** trust. Under a defined benefit plan, the trust's primary purpose is to safeguard and invest assets so that there will be enough to pay the employer's obligation to the employees. **In form**, the trust is a separate entity. **In substance**, the trust assets and liabilities belong to the employer. Consider the following scenarios.

- As long as the plan continues, the employer is responsible for the payment of the defined benefits (without regard to what happens in the trust). The employer must make up any shortfall in the accumulated assets held by the trust.

- On the other hand, the employer can recapture any excess accumulated in the trust, either through reduced future funding or through a return of funds.

Because a defined benefit plan specifies benefits in terms of uncertain future variables, a company must establish an appropriate funding pattern to ensure the availability of funds at retirement to provide the benefits promised. This funding level depends on a number of factors such as turnover, mortality, length of employee service, compensation levels, and interest earnings. Because these factors are uncertain, the following situations exist with defined benefit plans.

- Employers are at risk because they must contribute enough to meet the cost of benefits that the plan defines.
- The expense recognized each period is not necessarily equal to the cash contribution.
- The liability is controversial because its measurement and recognition relate to unknown future variables.

The accounting issues related to this type of plan are complex (see **Global View**). **Our discussion in the following sections deals primarily with defined benefit plans.**[4]

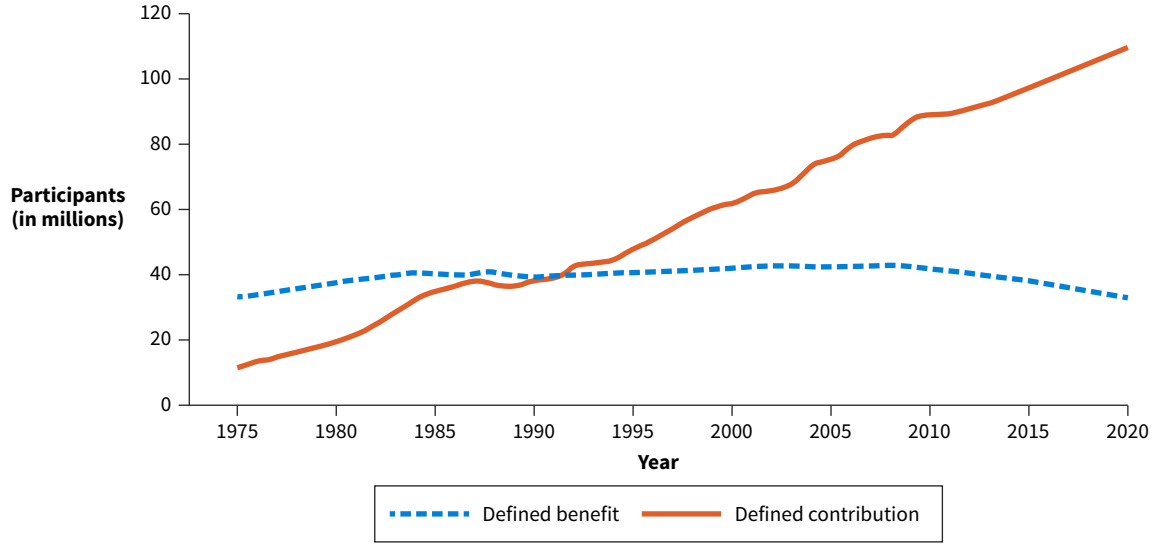
Global View

Outside the United States, private pension plans are less common because many other nations rely on government-sponsored pension plans. Consequently, accounting for defined benefit pension plans is typically a less-important issue elsewhere in the world. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

Accounting Matters — Which Plan Is Right for You?

Not only are defined benefit plans more costly for the employer to fund, they offer less flexibility in the timing and amount of contributions and are more complex and costly to administer. Defined benefit plans can cost upward of 5–6% of payroll. Their less-costly counterpart, the defined contribution plan, averages closer to 3% of payroll. It is no surprise then that defined contribution plans are increasingly more popular with employers, as indicated in the following chart.

Number of Participants in Employer-Sponsored Retirement Plans by Type of Plan



Source: U.S. Department of Labor, *Private Pension Plan Bulletin* (January 2021); and J. Ciesielski, "Pension Priorities: Why the Accounting Belongs on FASB's Agenda," *Analyst's Accounting Observer Blog* (February 16, 2017).

So, does this mean that we can we skip this chapter? No! There are almost 33 million employees currently participating in defined benefit pension plans. Recent data indicate the total amount of pension assets held by pension plans is $10.7 trillion (and growing), $3.3 trillion of which relates to defined benefit pension plans. Furthermore, the accounting for other post-employment benefits (OPEBs, discussed in the appendix) follows that used for defined benefit pension plans. While there is no argument that employers are turning to defined contributions pension plans to support their employees into retirement, defined benefit plans are certainly not going away anytime soon.

[4]A recent federal law requires employees to participate in an employer-sponsored defined contribution plan unless they explicitly opt out of it. This should help employees build their own nest eggs and will contribute to further growth in defined contribution plans. However, note the following three warnings: (1) low-income workers will still not be able to stash enough away, (2) it leaves each participant alone to manage risk, and (3) companies establish a minimum contribution, which too many participants choose to use, instead of a larger contribution.

The Role of Actuaries in Pension Accounting

The problems associated with defined benefit pension plans involve complicated mathematical considerations. Therefore, companies engage **actuaries** to ensure that a pension plan is appropriate for the employee group covered.[5]

- Actuaries are individuals trained through a long and rigorous certification program to assign probabilities to future events and their financial effects.
- Employers rely heavily on actuaries for assistance in developing, implementing, and funding pension funds.

Actuaries make predictions (called **actuarial assumptions**) of mortality rates, employee turnover, interest and earnings rates, early retirement frequency, future salaries, and any other factors necessary to operate a pension plan. They also compute the various pension measures that affect the financial statements, such as the pension obligation, the annual cost of servicing the plan, and the cost of amendments to the plan. In summary, accounting for defined benefit pension plans relies heavily upon information and measurements provided by actuaries.

Measures of the Liability

In accounting for a company's defined benefit pension plan, two questions arise.

1. What is the pension obligation that a company should report in the financial statements?
2. What is the pension expense for the period?

Attempting to answer the first question has resulted in much controversy.

Alternative Approaches

Most agree that an employer's **pension obligation** is the deferred compensation obligation it has to its employees for their service under the terms of the pension plan. Measuring that obligation is not so simple, though, because there are three alternative ways of measuring it.[6]

1. **Vested benefit obligation.** This measure is based only on the benefits vested to the employees, at current salary levels. Vested benefits are those that the employee is entitled to receive even if he or she is no longer employed by the company. Most pension plans require a minimum number of years of service to the employer before an employee achieves vested benefit status.
2. **Accumulated benefit obligation.** This measure uses both vested and nonvested years of service. The company computes the deferred compensation amount on all years of employees' service—**both vested and nonvested**—using current salary levels.

[5]An actuary's primary purpose is to ensure that the company has established an appropriate funding pattern to meet its pension obligations. This computation involves developing a set of assumptions and continued monitoring of these assumptions to ensure their realism. That the general public has little understanding of what an actuary does is illustrated by the following excerpt from the *Wall Street Journal*: "A polling organization once asked the general public what an actuary was, and received among its more coherent responses the opinion that it was a place where you put dead actors."

[6]One measure of the pension obligation is to determine the amount that the **Pension Benefit Guaranty Corporation** would require the employer to pay if it defaulted. (This amount is limited to 30% of the employer's net worth.) The accounting profession rejected this approach for financial reporting because it is too hypothetical and ignores the going concern concept.

3. **Projected benefit obligation.** This measure bases the deferred compensation amount on both vested and nonvested service **using future salaries**. Because future salaries are expected to be higher than current salaries, this approach results in the largest measurement of the pension obligation.

The choice between these measures is critical. The choice affects the amount of a company's pension liability and the annual pension expense reported. **Illustration 19.3** presents the differences in these three measurements.

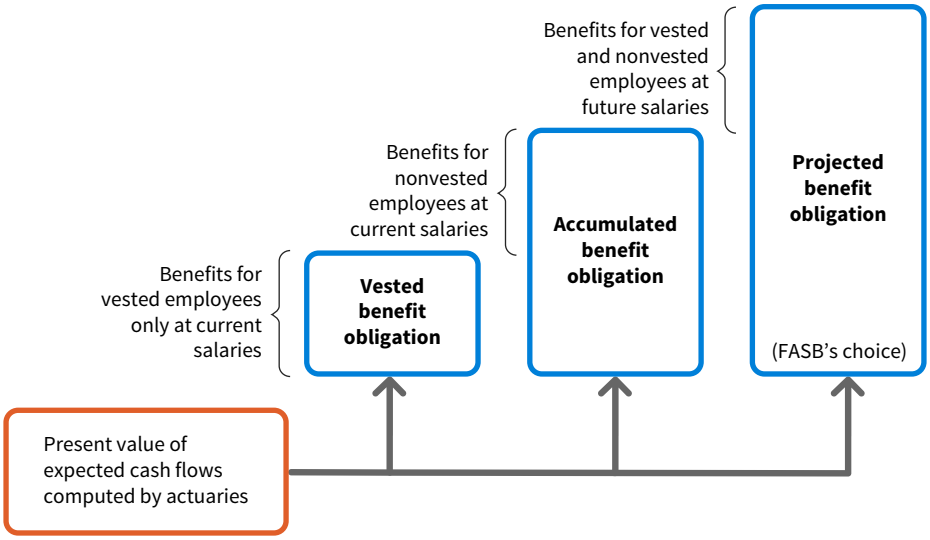

Benefits for vested and nonvested employees at future salaries
Benefits for nonvested employees at current salaries
Benefits for vested employees only at current salaries
Vested benefit obligation
Accumulated benefit obligation
Projected benefit obligation
(FASB's choice)
Present value of expected cash flows computed by actuaries

ILLUSTRATION 19.3 Different Measures of the Pension Obligation

Which of these alternative measures of the pension liability does the profession favor? **The profession adopted the projected benefit obligation—the present value of vested and nonvested benefits accrued to date, based on employees' future salary levels.**[7] Those in favor of the projected benefit obligation contend that a promise by an employer to pay benefits based on a percentage of the employees' future salaries is far greater than a promise to pay a percentage of their current salary, and such a difference should be included in the pension liability and pension expense.

- Notice in the definition of the projected benefit obligation, we say **present value** of vested and nonvested benefits.
- When an actuary measures the obligation, they discount the future obligation back to its present value using an appropriate discount (interest) rate.

Minor changes in the interest rate used to discount pension benefits can dramatically affect the measurement of the employer's obligation. For example, a 1% decrease in the discount rate can increase pension liabilities 15%. Accounting rules require that at each measurement date, a company must determine the appropriate discount rate used to measure the pension liability, based on current interest rates.

Recognition of the Net Funded Status of the Pension Plan

Companies must recognize on their balance sheet the full overfunded or underfunded status of their defined benefit pension plan. **[3]**[8] The **overfunded** or **underfunded status** is measured as the difference between the fair value of the plan assets and the projected benefit obligation.

[7]When we use the term "present value of benefits" throughout this chapter, we really mean the **actuarial** present value of benefits. **Actuarial present value** is the amount payable adjusted to reflect the time value of money **and** the probability of payment (by means of decrements for events such as death, disability, withdrawals, or retirement) between the present date and the expected date of payment. For simplicity, though, we use the term "present value" instead of "actuarial present value" in our discussion.

[8]Recognize that GAAP applies to pensions as well as other postretirement benefit plans (OPEBs). Appendix 19A addresses the accounting for OPEBs.

Example 19.2
Funded Status of Pension Plan

FACTS Coker Company has a projected benefit obligation of $300,000. The fair value of its plan assets is $210,000.

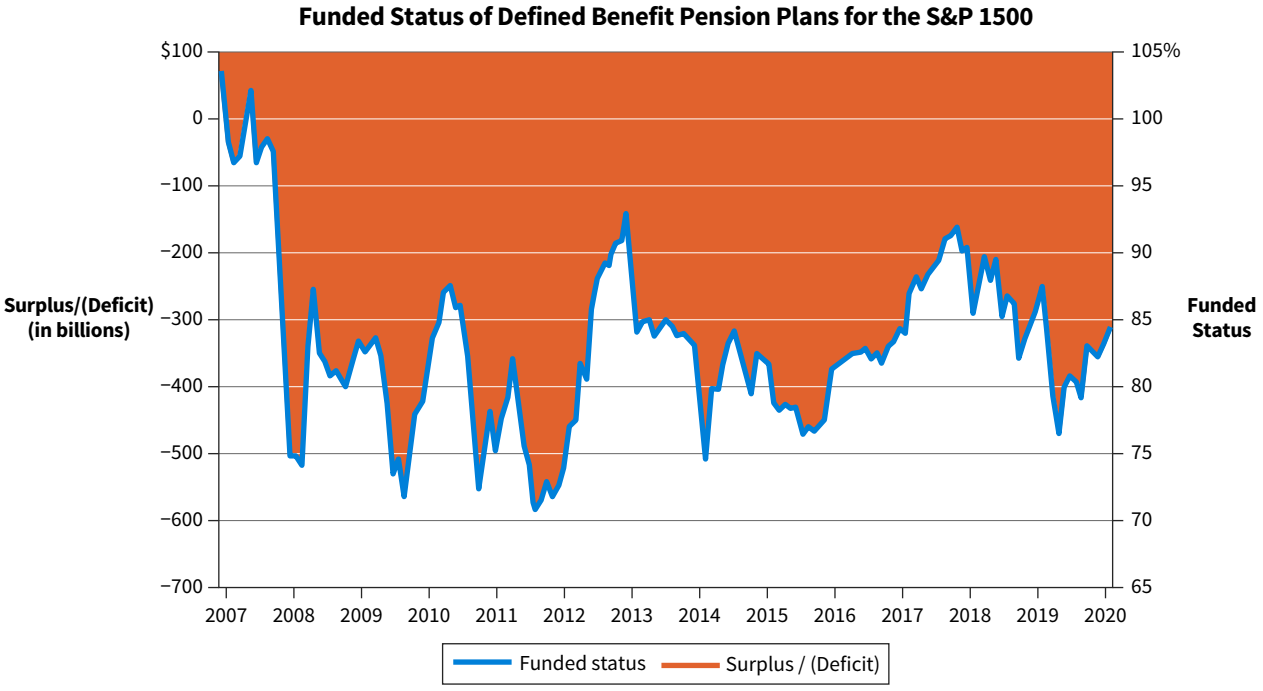
QUESTION What is the funded status of Coker's pension plan?

SOLUTION

The funded status of Coker's pension plan is $90,000 ($300,000 − $210,000) with a credit balance. That is, the plan is underfunded, and Coker therefore reports a pension liability on its balance sheet. If instead the fair value of Coker's plan assets were $430,000, it would report a pension asset of $130,000 ($430,000 − $300,000).

Accounting Matters — Roller Coaster

Ready for a roller coaster ride? Check out the chart below, which shows the financial health of pension plans over the last 10+ years.



Source: Mercer (December 2020).

As indicated, defined benefit pension plans have been underfunded since 2008, the funded status has fluctuated from lows around 70% to highs around 93%, landing most recently around an 85% funded status in 2020 with a deficit of almost $300 billion. Why the ups and downs?

A number of factors cause a fund to change from being overfunded to underfunded, interest rates being a primary culprit. First, low interest rates decimate returns on pension plan assets. Second, using low interest rates to discount the projected benefit obligation leads to a higher pension liability. **The Boeing Company** discloses that the projected benefit obligation for its pension plan would increase by $2.9 billion if the discount rate decreased by 25-basis points, or .25%.

Similarly, as was observed recently, actuaries may revise estimates related to mortality rates or expected salary levels, which could lead to an increase in the projected benefit obligation and more underfunded plans. Finally, more individuals are retiring and living longer, which leads to a depletion of the pension plan assets.

Components of Pension Expense

There is broad agreement that companies should account for pension cost on the **accrual basis**.[9] The profession recognizes that **accounting for pension plans requires measurement of the cost and its identification with the appropriate time periods**. The determination of pension expense, however, is extremely complicated because it is a function of the following components, as Illustration 19.4 shows.

ILLUSTRATION 19.4 Determining Pension Expense

Component	Explanation
Service cost	Service cost is the expense caused by the increase in pension benefits payable (the **projected benefit obligation**) to employees because of their services rendered during the current year. Actuaries compute **service cost** as the present value of the new benefits earned by employees during the year (see **Underlying Concepts**).
Interest on the liability	Because a pension is a deferred compensation arrangement, there is a time value of money factor. As a result, companies record the pension liability on a discounted basis. **Interest expense accrues each year on the projected benefit obligation just as it does on any discounted debt.** The actuary helps to select the interest rate, referred to as the **settlement rate**.
Actual return on plan assets	The return earned by the accumulated pension fund assets in a particular year is relevant in measuring the net cost to the employer of sponsoring an employee pension plan. Therefore, **a company should adjust annual pension expense for interest and dividends that accumulate within the fund, as well as increases and decreases in the fair value of the fund assets**.
Amortization of prior service cost	Pension plan amendments (including initiation of a pension plan) often include provisions to increase benefits (or in rare situations, to decrease benefits) for employee service provided in prior years. A company grants plan amendments with the expectation that it will realize economic benefits in future periods. Thus, **it allocates the cost (prior service cost) of providing these retroactive benefits to pension expense in the future, specifically to the remaining service-years of the affected employees**.
Gain or loss	Volatility in pension expense can result from sudden and large changes in the fair value of plan assets (resulting in differences between the actual return and the expected return on plan assets) and by changes in the projected benefit obligation. We will discuss these complex computations later in the chapter.

Illustration 19.5 shows the **components of pension expense** and their effect on total pension expense (increase or decrease).

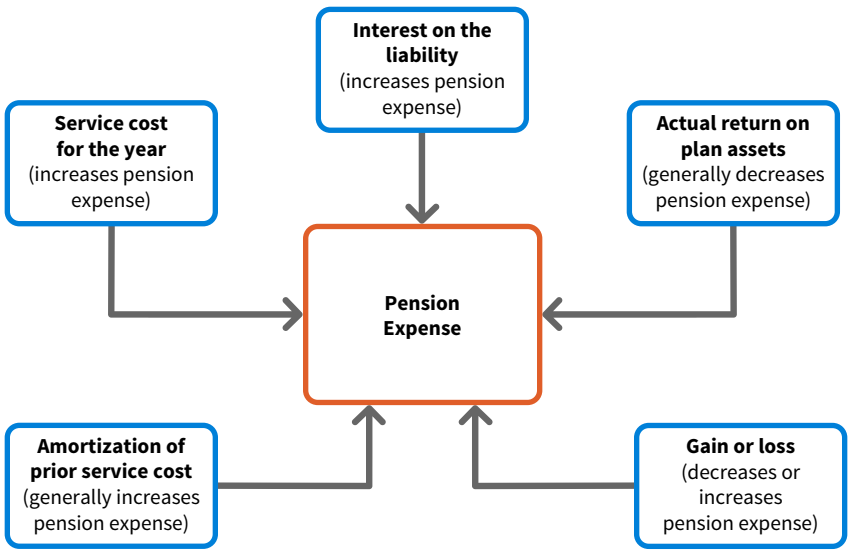

Interest on the liability (increases pension expense)
Service cost for the year (increases pension expense)
Actual return on plan assets (generally decreases pension expense)
Pension Expense
Amortization of prior service cost (generally increases pension expense)
Gain or loss (decreases or increases pension expense)

ILLUSTRATION 19.5
Components of Annual Pension Expense

Underlying Concepts

The expense recognition principle and the definition of a liability justify accounting for pension cost on the accrual basis. This requires recording an expense when employees earn the future benefits, and recognizing an existing obligation to pay pensions later based on current services received.

[9] At one time, companies applied the **cash basis** of accounting to pension plans by recognizing the amount paid in a particular accounting period as the pension expense for the period. The problem was that the amount paid or funded in a fiscal period depended on financial management and was too often discretionary. For example, funding could depend on the availability of cash, the level of earnings, or other factors unrelated to the requirements of the plan. Application of the cash basis made it possible to manipulate the amount of pension expense appearing in the income statement simply by varying the cash paid to the pension fund.

Service Cost

The **service cost** is the **actuarial present value of benefits attributed by the pension benefit formula to employee service during the period**.

The actuary predicts the additional benefits that an employer must pay under the plan's benefit formula as a result of the employees' current-year service.

The actuary discounts the cost of those future benefits back to their present value to determine service cost.

The FASB concluded that **companies must consider future compensation levels in measuring the present obligation and periodic pension expense if the plan benefit formula incorporates them**.

In other words, the present obligation resulting from a promise to pay a benefit of 1% of an employee's **final pay** differs from the promise to pay 1% of **current pay**. To overlook this fact is to ignore an important aspect of pension expense. Thus, the FASB adopts the **benefits/years-of-service actuarial method**, **which determines pension expense based on future salary levels**.

Some object to this determination, arguing that a company should have more freedom to select an expense recognition pattern. Others believe that incorporating future salary increases into current pension expense is accounting for events that have not yet happened. They argue that if a company terminates the plan today, it pays only liabilities for accumulated benefits. **Nevertheless, the FASB indicates that the projected benefit obligation provides a more realistic measure of the employer's obligation under the plan on a going concern basis and, therefore, companies should use it as the basis for determining service cost.**

Interest on the Liability

The second component of pension expense is **interest on the liability**, or **interest expense**. Because a company defers paying the liability until maturity, the company records it on a discounted basis. The liability then accrues interest over the life of the employee. **The interest component is the interest for the period on the projected benefit obligation outstanding during the period.** The FASB did not address the question of how often to compound the interest cost. *To simplify our illustrations and problem materials, we use a simple interest computation, applying the interest rate to the beginning-of-the-year balance of the projected benefit liability.*

How do companies determine the interest rate to apply to the pension liability? The FASB states that the assumed discount rate should **reflect the rates at which companies can effectively settle pension benefits**. In determining these **settlement rates**, companies should look to rates of return on high-quality fixed-income investments currently available, whose cash flows match the timing and amount of the expected benefit payments. The objective of selecting the assumed discount rates is to measure a single amount that, if invested in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the pension benefits when due.

Actual Return on Plan Assets

Pension plan assets are usually investments in stocks, bonds, other securities, and real estate that a company holds to earn a reasonable return, generally at minimum risk. What activities increase or decrease the balance of the plan assets?

- **Employer contributions**. When the employer contributes funds to the plan assets on behalf of the employees, the balance in the plan assets will increase.

- **Actual return on plan assets**. The investments in stocks, bonds, and other securities generate a return in the form of dividends, interest, and changes in fair value. These returns increase the balance of the plan assets. The higher the actual return, the less the employer has to contribute over time, and, therefore, the less pension expense that it needs to report.
- **Benefits paid.** Employees who are currently retired receive benefit payments paid from the plan assets. Therefore, benefit payments decrease the balance of the plan assets.

Companies compute the actual return by adjusting the change in the plan assets for the effects of contributions during the year and benefits paid out during the year. The following equation, or a variation thereof, can be used to compute the actual return.

$$\text{Actual Return} = \begin{pmatrix}\text{Plan Assets}\\ \text{Ending}\\ \text{Balance}\end{pmatrix} - \begin{pmatrix}\text{Plan Assets}\\ \text{Beginning}\\ \text{Balance}\end{pmatrix} - \text{Contributions} + \text{Benefits Paid}$$

Stated another way, the actual return on plan assets is the difference between the **fair value of the plan assets** at the beginning of the period and at the end of the period, adjusted for contributions and benefit payments.

Example 19.3
Actual Return on Plan Assets

FACTS Munox Inc. had the following data related to its pension plan assets for the year.

Fair value of plan assets at beginning of the year	$4,200,000
Fair value of plan assets at end of the year	5,000,000
Contributions to plan during the year	500,000
Benefits paid during the year	300,000

QUESTION What is the actual return on the plan assets for the year?

SOLUTION

Fair value of plan assets at end of the year	$5,000,000
Deduct: Fair value of plan assets at beginning of the year	4,200,000
Increase in fair value of plan assets	800,000
Deduct: Contributions to plan during the year	500,000
Add: Benefits paid during the year	300,000
Actual return on plan assets	$ 600,000

If the actual return on the plan assets is positive (a gain) during the period, a company subtracts it when computing pension expense. If the actual return is negative (a loss) during the period, the company adds it when computing pension expense. (At this point, we use the actual return. **Later, for purposes of computing pension expense, we use the expected rate of return.**)

Put It into Practice LO 19.1
Determine Pension Components

FACTS Mayhew Inc. has the following information for its defined benefit pension plan in 2025.

Fair value of pension plan assets, January 1, 2025	$2,400,000
Fair value of pension plan assets, December 31, 2025	2,725,000
Contributions to the plan in 2025	280,000
Benefits paid retirees in 2025	350,000
Projected benefit obligation at December 31, 2025	2,737,000
Accumulated benefit obligation at December 31, 2025	1,980,000
Service cost for 2025	194,000
Interest on January 1, 2025, projected benefit obligation	253,000

INSTRUCTIONS

Determine the following for Mayhew's pension plan in 2025.

a. Actual return on pension assets.

b. Pension expense.

c. Funded status of the pension plan.

SOLUTION

a.	Fair value of plan assets at 12/31/25	$2,725,000	
	Fair value of plan assets at 1/1/25	(2,400,000)	
	Increase in fair value of plan assets	325,000	
	Deduct: Contributions to plan during 2025	280,000	
	Add: Benefits paid during 2025	350,000	
	Actual return on plan assets for 2025	$ 395,000	
b.	Service cost	$194,000	
	Interest on the liability	253,000	
	Actual return on assets (see part (a))	(395,000)	
	Pension expense	$ 52,000	
c.	Projected benefit obligation at December 31, 2025	$2,737,000	
	Fair value of pension plan assets, December 31, 2025	2,725,000	
	Funded status of the plan	$ 12,000	Credit (Liability)

Mayhew will report a pension liability of $12,000 on its balance sheet.

19.2 Using a Pension Worksheet

LEARNING OBJECTIVE 2

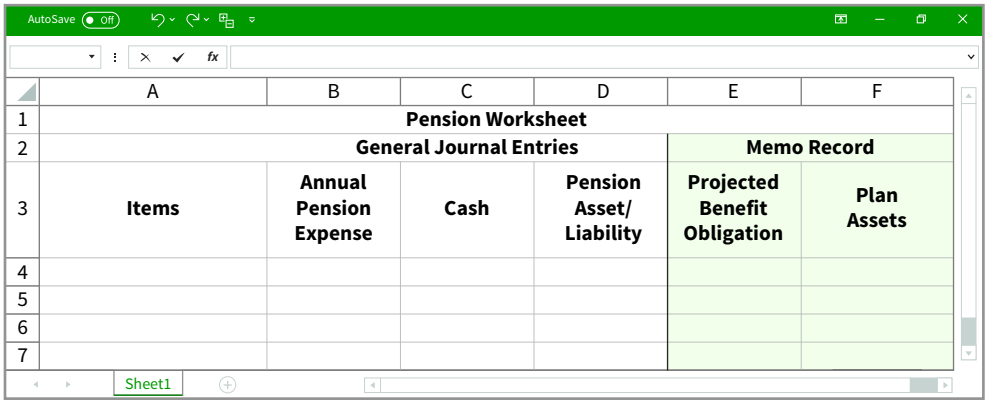
Use a worksheet for employer's pension plan entries.

We will now illustrate the basic computation of pension expense using the first three components:

1. Service cost.
2. Interest on the liability.
3. Actual return on plan assets.

We discuss the other pension expense components (amortization of prior service cost, and gains and losses) in later sections.

Companies often use a worksheet to record pension-related information. As its name suggests, the worksheet is a working tool. A worksheet is **not** a permanent accounting record. It is neither a journal nor part of the general ledger. The worksheet is merely a device to make it easier to prepare entries and the financial statements.[10] **Illustration 19.6** shows the format of the **pension worksheet**.



	A	B	C	D	E	F
1	Pension Worksheet					
2		General Journal Entries			Memo Record	
3	Items	Annual Pension Expense	Cash	Pension Asset/ Liability	Projected Benefit Obligation	Plan Assets
4						
5						
6						
7						

ILLUSTRATION 19.6 Basic Format of Pension Worksheet

- The "General Journal Entries" columns of the worksheet (near the center) determine the entries to record in the formal general ledger accounts.
- The "Memo Record" columns (on the right side) maintain balances in the projected benefit obligation and the plan assets.
- The difference between the projected benefit obligation and the fair value of the plan assets is the **pension asset/liability**, which is reported in the balance sheet. Remember the following two items.

1. If the pension benefit obligation is greater then plan assets → Pension liability.
2. If the pension benefit obligation is less than plan assets → Pension asset.

On the first line of the worksheet, a company records the beginning balances (if any). It then records subsequent transactions and events related to the pension plan using debits and credits, using both sets of columns as if they were one. For each transaction or event, the debits must equal the credits. **The ending balance in the Pension Asset/Liability column should equal the net balance in the memo record.**

Example 19.4
2025 Entries and Worksheet

FACTS On January 1, 2025, Zarle Company provides the following information related to its pension plan for the year 2025.

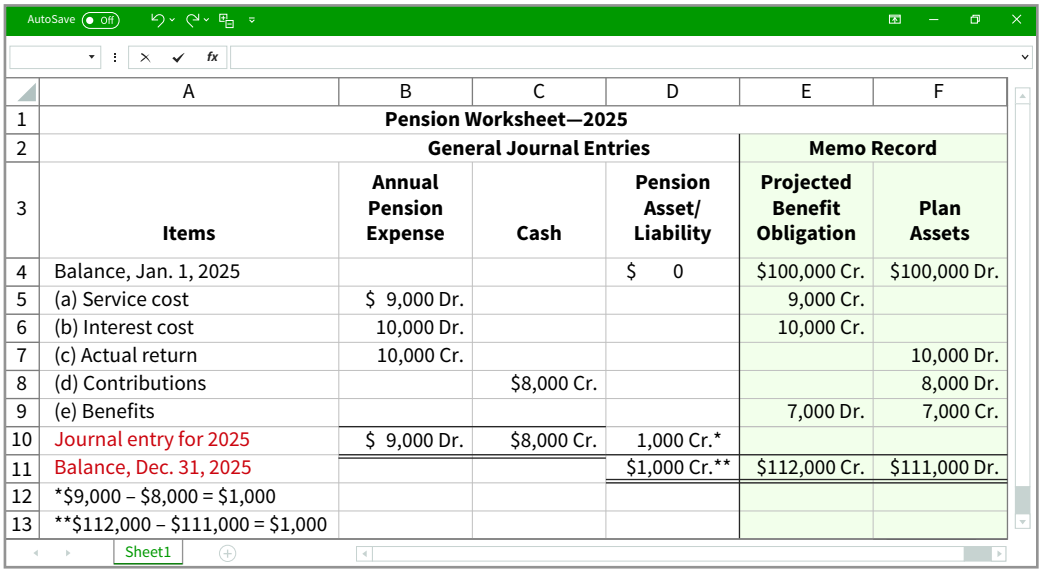
- Plan assets, January 1, 2025, are $100,000.
- Projected benefit obligation, January 1, 2025, is $100,000.
- Annual service cost is $9,000.
- Settlement rate is 10%.
- Actual return on plan assets is $10,000.
- Funding contributions are $8,000.
- Benefits paid to retirees during the year are $7,000.

QUESTION What is the pension worksheet you would prepare for Zarle?

[10] The use of a pension entry worksheet is recommended and illustrated by Paul B. W. Miller, "The New Pension Accounting (Part 2)," *Journal of Accountancy* (February 1987), pp. 86–94.

SOLUTION

The 2025 pension worksheet for Zarle is as follows.



	A	B	C	D	E	F
1	**Pension Worksheet—2025**					
2		**General Journal Entries**			**Memo Record**	
3	**Items**	**Annual Pension Expense**	**Cash**	**Pension Asset/ Liability**	**Projected Benefit Obligation**	**Plan Assets**
4	Balance, Jan. 1, 2025			$ 0	$100,000 Cr.	$100,000 Dr.
5	(a) Service cost	$ 9,000 Dr.			9,000 Cr.	
6	(b) Interest cost	10,000 Dr.			10,000 Cr.	
7	(c) Actual return	10,000 Cr.				10,000 Dr.
8	(d) Contributions		$8,000 Cr.			8,000 Dr.
9	(e) Benefits				7,000 Dr.	7,000 Cr.
10	Journal entry for 2025	$ 9,000 Dr.	$8,000 Cr.	1,000 Cr.*		
11	Balance, Dec. 31, 2025			$1,000 Cr.**	$112,000 Cr.	$111,000 Dr.
12	*$9,000 – $8,000 = $1,000					
13	**$112,000 – $111,000 = $1,000					

In the worksheet in Example 19.4, Zarle records the beginning balances for the projected benefit obligation and the pension plan assets on the first line of the worksheet in the memo record. Because the projected benefit obligation and the plan assets are the same at January 1, 2025, the Pension Asset/Liability account has a zero balance at January 1, 2025.

- Entry (a) records the service cost component, which increases pension expense by $9,000 and increases the liability (projected benefit obligation) by $9,000.
- Entry (b) accrues the interest expense component, which increases the pension expense by $10,000 (the beginning projected benefit obligation multiplied by the settlement rate of 10%), and increases the liability by $10,000.
- Entry (c) records the actual return on the plan assets, which increases the plan assets and decreases the pension expense.
- Entry (d) records Zarle's contribution (funding) of assets to the pension fund, thereby decreasing cash by $8,000 and increasing plan assets by $8,000.
- Entry (e) records the benefit payments made to retirees, which results in equal $7,000 decreases to the plan assets and the projected benefit obligation.

Continuing with Example 19.4, Zarle makes the following journal on December 31, which records the pension expense in 2025, as follows.

	2025	
Pension Expense	9,000	
Cash		8,000
Pension Asset/Liability		1,000

Funded Status

In Example 19.4, the credit to Pension Asset/Liability for $1,000 represents the difference between the 2025 pension expense of $9,000 and the amount funded of $8,000. Pension Asset/Liability (credit) is a liability because Zarle underfunds the plan by $1,000. The Pension Asset/Liability account balance of $1,000 also equals the net of the balances in the memo accounts. **Illustration 19.7** shows that the projected benefit obligation exceeds the plan assets by $1,000, which reconciles to the pension liability reported in the balance sheet.

Projected benefit obligation (Credit)	$(112,000)
Plan assets at fair value (Debit)	111,000
Pension asset/liability (Credit)	$ (1,000)

ILLUSTRATION 19.7 Pension Reconciliation Schedule—December 31, 2025

If the net of the memo record balances is a credit, the reconciling amount in the pension asset/liability column will be a credit equal in amount. If the net of the memo record balances is a debit, the pension asset/liability amount will be a debit equal in amount. The worksheet is designed to produce this reconciling feature, which is useful later in the preparation of the financial statements and required note disclosure related to pensions.

As a result of the journal entry recorded in Example 19.4, the debit to Pension Expense exceeds the credit to Cash, resulting in a credit to Pension Asset/Liability—the recognition of a liability. If the credit to Cash exceeded the debit to Pension Expense, Zarle would debit Pension Asset/Liability—the recognition of an asset.

Put It into Practice LO 19.2
Prepare a Pension Worksheet

FACTS The following data apply to the pension plan of Brickhouse Inc. for the year 2025.

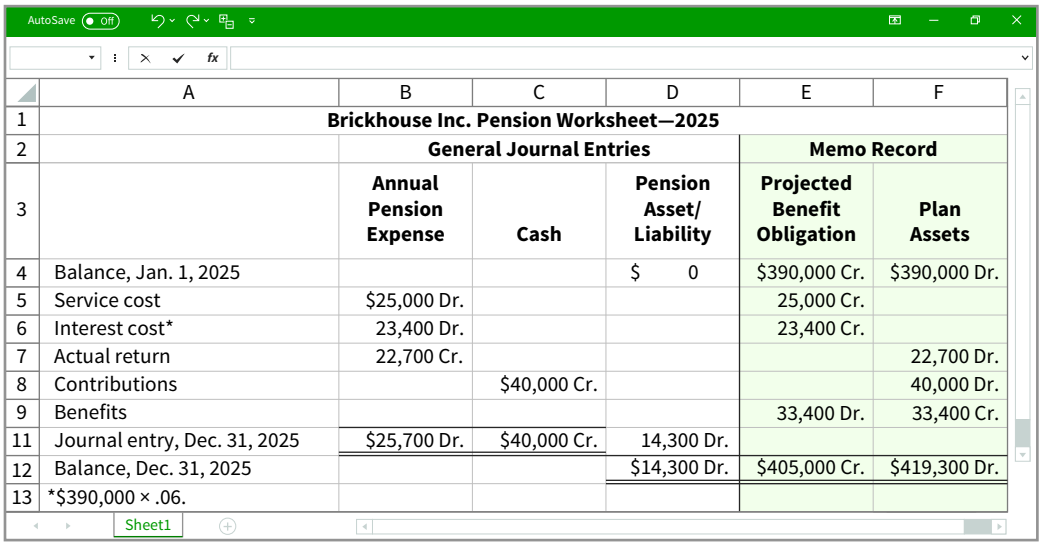
Plan assets, January 1, 2025	$390,000
Projected benefit obligation, January 1, 2025	390,000
Service cost	25,000
Contributions	40,000
Actual return on plan assets	22,700
Benefits paid to retirees	33,400
Settlement rate	6%

INSTRUCTIONS

Using the above data, compute pension expense for the year 2025. As part of your solution, prepare a pension worksheet that shows the journal entry for pension expense for 2025 and the year-end balances in the related pension accounts.

SOLUTION

The pension worksheet for 2025 is as follows.



	A	B	C	D	E	F
1	**Brickhouse Inc. Pension Worksheet—2025**					
2		**General Journal Entries**			**Memo Record**	
3		**Annual Pension Expense**	**Cash**	**Pension Asset/ Liability**	**Projected Benefit Obligation**	**Plan Assets**
4	Balance, Jan. 1, 2025			$ 0	$390,000 Cr.	$390,000 Dr.
5	Service cost	$25,000 Dr.			25,000 Cr.	
6	Interest cost*	23,400 Dr.			23,400 Cr.	
7	Actual return	22,700 Cr.				22,700 Dr.
8	Contributions		$40,000 Cr.			40,000 Dr.
9	Benefits				33,400 Dr.	33,400 Cr.
11	Journal entry, Dec. 31, 2025	$25,700 Dr.	$40,000 Cr.	14,300 Dr.		
12	Balance, Dec. 31, 2025			$14,300 Dr.	$405,000 Cr.	$419,300 Dr.
13	*$390,000 × .06.					

December 31, 2025

Pension Expense	25,700	
Pension Asset/Liability	14,300	
Cash		40,000

19.3 Prior Service Cost (PSC)

LEARNING OBJECTIVE 3

Describe the accounting and amortization of prior service costs.

When either initiating (adopting) or amending a defined benefit plan, a company often provides benefits to employees for years of service **before** the date of initiation or amendment. As a result of this prior service cost, the projected benefit obligation is increased to recognize this additional liability. In many cases, the increase in the projected benefit obligation is substantial.

Amortization

Should a company report an expense for these **prior service costs** at the time it initiates or amends a plan? The FASB says no. The Board's rationale is that the employer would not provide credit for past years of service unless it expects to receive benefits in the future. As a result, a company should not recognize the **retroactive benefits** as pension expense in the year of amendment. Instead:

- The employer initially records the prior service cost as an adjustment to other comprehensive income, by debiting Other Comprehensive Income (PSC) and crediting Projected Benefit Obligation.
- The employer then recognizes the prior service cost as a component of pension expense over the remaining service lives of the employees who are expected to benefit from the change in the plan.

The cost of the retroactive benefits (including any benefits provided to existing retirees) is the increase in the projected benefit obligation at the date of the amendment. An actuary computes the amount of the prior service cost. Regarding amortization of the prior service cost, the Board prefers a **years-of-service method** that is similar to a units-of-production computation. In this approach, a company:

1. Computes the total number of service-years to be worked by all of the participating employees.
2. Divides the prior service cost by the total number of service-years, to obtain a cost per service-year (the unit cost).
3. Multiplies the number of service-years consumed each year by the cost per service-year, to obtain the annual amortization charge.

Example 19.5 Years-of-Service Amortization

FACTS Zarle Company's defined benefit pension plan covers 170 employees. In its negotiations with the employees, Zarle Company amends its pension plan on January 1, 2026, and grants $80,000 of prior service costs to its employees. The employees are grouped according to expected years of retirement, as follows.

Group	Number of Employees	Expected Retirement on Dec. 31
A	40	2026
B	20	2027
C	40	2028
D	50	2029
E	20	2030
	170	

QUESTIONS (a) What are the service-years, per year and in total, and (b) what is the annual amortization for years 2026-2030?

SOLUTION

a.

	Service-Years					
Year	A	B	C	D	E	Total
2026	40	20	40	50	20	170
2027		20	40	50	20	130
2028			40	50	20	110
2029				50	20	70
2030					20	20
	40	40	120	200	100	500

b. Given a prior service cost of $80,000 and a total of 500 service-years for all years, the cost per service-year is $160 ($80,000 ÷ 500). The annual amount of amortization based on a $160 cost per service-year is as follows.

Year	Total Service-Years	×	Cost per Service-Year	=	Annual Amortization
2026	170		$160		$27,200
2027	130		160		20,800
2028	110		160		17,600
2029	70		160		11,200
2030	20		160		3,200
	500				$80,000

An alternative method of computing amortization of **prior service cost is permitted**. **Employers may use straight-line amortization over the average remaining service life of the employees.** In Example 19.5, with 500 service-years and 170 employees, the average would be 2.94 years (500 ÷ 170). The annual expense would be $27,211 ($80,000 ÷ 2.94). Using this method, Zarle Company would record expense in 2026, 2027, and 2028 as shown in Illustration 19.8.

Year	Expense
2026	$27,211
2027	27,211
2028	25,578 (.94 × $27,211)
	$80,000

ILLUSTRATION 19.8 Straight-Line Amortization

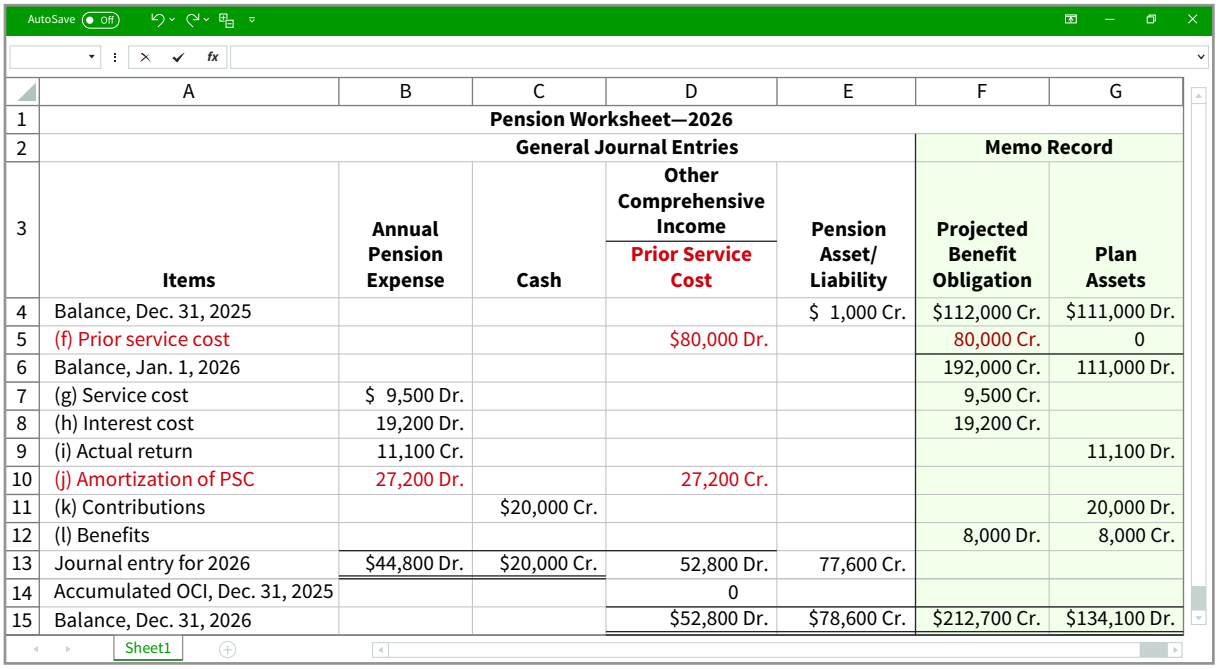
Example 19.6
2026 Entries and Worksheet

FACTS Continuing with the Zarle Company pension plan into 2026, assume that the company amends the pension plan on January 1, 2026, to grant employees prior service benefits with a present value of $80,000. Zarle uses the annual amortization amounts, as computed in Example 19.5 using the years-of-service approach ($27,200 for 2026). The following additional facts apply to the pension plan for the year 2026.

- Annual service cost is $9,500.
- Settlement rate is 10%.
- Actual return on plan assets is $11,100.
- Annual funding contributions are $20,000.
- Benefits paid to retirees during the year are $8,000.
- Amortization of prior service cost (PSC) using the years-of-service method is $27,200.
- Accumulated other comprehensive income (hereafter referred to as accumulated OCI) on December 31, 2025, is zero.

QUESTION What is the pension worksheet you would prepare for Zarle in 2026?

SOLUTION



	A	B	C	D	E	F	G
1	Pension Worksheet—2026						
2		General Journal Entries				Memo Record	
3	Items	Annual Pension Expense	Cash	Other Comprehensive Income — Prior Service Cost	Pension Asset/ Liability	Projected Benefit Obligation	Plan Assets
4	Balance, Dec. 31, 2025				$ 1,000 Cr.	$112,000 Cr.	$111,000 Dr.
5	(f) Prior service cost			$80,000 Dr.		80,000 Cr.	0
6	Balance, Jan. 1, 2026					192,000 Cr.	111,000 Dr.
7	(g) Service cost	$ 9,500 Dr.				9,500 Cr.	
8	(h) Interest cost	19,200 Dr.				19,200 Cr.	
9	(i) Actual return	11,100 Cr.					11,100 Dr.
10	(j) Amortization of PSC	27,200 Dr.		27,200 Cr.			
11	(k) Contributions		$20,000 Cr.				20,000 Dr.
12	(l) Benefits					8,000 Dr.	8,000 Cr.
13	Journal entry for 2026	$44,800 Dr.	$20,000 Cr.	52,800 Dr.	77,600 Cr.		
14	Accumulated OCI, Dec. 31, 2025			0			
15	Balance, Dec. 31, 2026			$52,800 Dr.	$78,600 Cr.	$212,700 Cr.	$134,100 Dr.

In the worksheet in Example 19.6, we have added an additional column to the worksheet to record the prior service cost adjustment to other comprehensive income. Remember that other comprehensive income, like net income, is measured over a period of time and is then closed out into accumulated other comprehensive income on the balance sheet (much like net income is closed into retained earnings). As shown in row 5, the other comprehensive income amount related to prior service cost is added to accumulated other comprehensive income ("Accumulated OCI") to arrive at a debit balance of $52,800, which would be reported as a component of equity at December 31, 2026.

The first line of the worksheet shows the beginning balances of the Pension Asset/Liability account and the memo accounts. These are simply the balances carried forward from Example 19.4.

- Entry (f) records Zarle's granting of prior service cost, by adding $80,000 to the projected benefit obligation and decreasing other comprehensive income—prior service cost by the same amount.

- Entries (g), (h), (i), (k), and (l) are similar to the corresponding entries in 2025. To compute the interest cost on the projected benefit obligation for entry (h), we use the beginning projected benefit balance of $192,000, which has been adjusted for the prior service cost amendment on January 1, 2026.
- Entry (j) records the 2026 amortization of prior service cost by debiting Pension Expense for $27,200 and crediting **Other Comprehensive Income (PSC)** for the same amount.

Zarle makes the following journal entry on December 31 to formally record the 2026 pension expense (the sum of the annual pension expense column) and related pension information.

	2026	
Pension Expense	44,800	
Other Comprehensive Income (PSC)	52,800	
Cash		20,000
Pension Asset/Liability		77,600

Funded Status—2026

Because the debits to Pension Expense and to Other Comprehensive Income (PSC) exceed the funding, Zarle credits the Pension Asset/Liability account for the $77,600 difference. That account is a liability. In 2026, as in 2025, the balance of the Pension Asset/Liability account ($78,600) is equal to the net of the balances in the memo accounts, as shown in **Illustration 19.9**.

Projected benefit obligation (Credit)	$(212,700)
Plan assets at fair value (Debit)	134,100
Pension asset/liability (Credit)	$ (78,600)

ILLUSTRATION 19.9 Pension Reconciliation Schedule—December 31, 2026

Note that the full effect of the plan amendment awarding additional benefits for prior service is captured in the December 31, 2026, pension entry. The **reconciliation** is the formula that makes the worksheet work. It relates the components of pension accounting, recorded and unrecorded, to one another.

FACTS Robertson Company adopts a defined benefit pension plan on January 1, 2024, resulting in the following ending balances at December 31, 2024: plan assets $220,000 and projected benefit obligation $277,000. Other data relating to the operation of the plan in 2025 are as follows.

Annual service cost	$ 19,000
Actual return on plan assets	22,000
Annual funding (contributions)	40,000
Benefits paid	16,400
Prior service cost (plan amended, 1/1/25)	160,000
Amortization of prior service cost	54,400
Settlement rate and expected rate of return	10%

INSTRUCTIONS

a. Prepare a pension worksheet presenting the 2025 pension balances and activities.

b. Prepare the journal entry (from the worksheet) to record the pension plan transactions and events at December 31, 2025.

Put It into Practice LO 19.3
Prepare Worksheet for Prior Service Costs

SOLUTION

a.

	A	B	C	D	E	F	G
1	**Prior Service Costs**						
2	**General Journal Entries**					**Memo Record**	
3		**Annual Pension Expense**	**Cash**	**Other Comprehensive Income/Prior Service Cost**	**Pension Asset/ Liability**	**Projected Benefit Obligation**	**Plan Assets**
4	Balance, Dec. 31, 2024				$ 57,000 Cr.	$277,000 Cr.	$220,000 Dr.
5	PSC, Jan. 1, 2025			$160,000 Dr.		160,000 Cr.	
6	Balance, Jan. 1, 2025					437,000 Cr.	220,000 Dr.
7	Service cost	$19,000 Dr.				19,000 Cr.	
8	Interest cost*	43,700 Dr.				43,700 Cr.	
9	Actual return	22,000 Cr.					22,000 Dr.
10	Amortization of PSC	54,400 Dr.		54,400 Cr.			
11	Contributions		$40,000 Cr.				40,000 Dr.
12	Benefits					16,400 Dr.	16,400 Cr.
13	Journal entry for 2025	$95,100 Dr.	$40,000 Cr.	105,600 Dr.	160,700 Cr.		
14	Accum. OCI, Dec. 31, 2024			0			
15	Balance, Dec. 31, 2025			$105,600 Dr.	$217,700 Cr.	$483,300 Cr.	$265,600 Dr.
16	* $437,000 × .10						

b. The journal entry for 2025 is as follows.

	December 31, 2025	
Other Comprehensive Income (PSC)	105,600	
Pension Expense	95,100	
Cash		40,000
Pension Asset /Liability		160,700

19.4 Gains and Losses

LEARNING OBJECTIVE 4

Explain the accounting and amortization for unexpected gains and losses.

Of great concern to companies that have pension plans are the uncontrollable and unexpected swings in pension expense that can result from:

- Sudden and large changes in the fair value of plan assets.
- Changes in actuarial assumptions that affect the amount of the projected benefit obligation.

If these gains or losses impact fully the financial statements in the period of realization or incurrence, substantial fluctuations in pension expense result.

Therefore, the FASB decided to reduce the volatility associated with pension expense by using **smoothing techniques** that dampen and in some cases fully eliminate the fluctuations.

Smoothing Unexpected Gains and Losses on Plan Assets

One component of pension expense, actual return on plan assets, reduces pension expense (assuming the actual return is positive). A large change in the actual return can substantially affect pension expense for a year. Assume a company has a 40% return in the stock market for the year. Should this substantial, and perhaps one-time, event affect current pension expense?

Actuaries ignore current fluctuations when they develop a funding pattern for employers to pay expected benefits in the future. They develop an **expected rate of return** and multiply it by an asset value weighted over a reasonable period of time (often referred to as the **market-related asset value**) to arrive at an **expected return on plan assets**. They then use this return to determine a company's funding pattern.[11]

The FASB adopted the actuary's approach to dampen wide swings that might occur in the actual return. To achieve this goal, the company calculates expected return as follows.

Fair Value of Plan Assets at the Beginning of the Year × Expected Rate of Return = Expected Return

The company includes **expected return** as a component of pension expense, not the actual return, in a given year. The difference between the expected return and the actual return is referred to as the **unexpected gain or loss.** The FASB uses the term **asset gains and losses**. These are determined as follows.

- When actual return is greater than the expected return, then the difference is an **asset gain**.
- When actual return is less than the expected return, then the difference is an **asset loss**.

What happens to unexpected gains or losses in the accounting for pensions? Companies record asset gains and asset losses in an account, **Other Comprehensive Income (G/L)**, combining them with gains and losses accumulated in prior years. This treatment is similar to prior service cost. The Board believes this treatment is consistent with the practice of including in other comprehensive income certain changes in value that have not been recognized in net income (for example, unrealized gains and losses on available-for-sale debt securities). **[5]** In addition, the accounting is simple, transparent, and symmetrical.

[11]Companies may use different ways of determining the market-related asset value for different classes of assets.**[4]** For example, an employer might use fair value for bonds and a five-year moving-average for equities. But companies should consistently apply the manner of determining market-related value from year to year for each asset class. Throughout our Zarle examples, we assume that market-related values based on a calculated value and the fair value of plan assets are equal. *For homework purposes, use the fair value of plan assets as the measure for the market-related value.*

Example 19.7
Asset Gain/Loss

FACTS In 2027, Zarle Company has an actual return on plan assets of $12,000. The expected rate of return is 10%, and the fair value of the plan assets at the beginning of 2027 is $134,100.

QUESTION What is the unexpected gain or loss (if any)?

SOLUTION

The expected return is calculated as follows.

$$\$134{,}100 \times .10 = \$13{,}410$$

Next, compare the actual return and expected return to determine if the difference is an asset gain or loss.

$12,000 (actual return) is less than $13,410 (expected return) by $1,410:
this difference is an **asset loss**

The asset loss is debited to Other Comprehensive Income (G/L) and credited to Pension Expense. **We show treatment of this loss later, in the worksheet in Example 19.9.**

Smoothing Unexpected Gains and Losses on the Pension Liability

In estimating the projected benefit obligation (the liability), actuaries make assumptions about such items as mortality rate, retirement rate, turnover rate, disability rate, and salary amounts. Any change in these actuarial assumptions may cause the projected benefit obligation to increase or decrease. Seldom does actual experience coincide exactly with actuarial predictions. These unexpected gains or losses from changes in the projected benefit obligation are called **liability gains and losses**, and are determined as follows.

- Actuary determines the projected benefit obligation should be increased → **Liability loss**.
- Actuary determines the projected benefit obligation should be decreased → **Liability gain**.

Companies report liability gains and losses in Other Comprehensive Income (G/L) along with the asset gains and losses. The combined gains and losses are accumulated from year to year and reported in Accumulated Other Comprehensive Income on the balance sheet in the stockholder's equity section.

Corridor Amortization

The asset and liability gains and losses can offset each other. As a result, the Accumulated OCI account related to gains and losses may not grow very large. But, it is possible that no offsetting will occur and that the balance in the Accumulated OCI account related to gains and losses will continue to grow.

- To limit the growth of the Accumulated OCI account, the FASB invented the **corridor approach** for amortizing the account's accumulated balance when it gets too large.
- How large is too large? The FASB set a limit of 10% of the larger of the beginning balances of the projected benefit obligation **or** the market-related value of the plan assets.
- **Above that size, the Accumulated OCI account related to gains and losses is considered too large and must be amortized.**

To illustrate the corridor approach, data for Callaway Co.'s projected benefit obligation and plan assets over a period of six years are shown in **Illustration 19.10**.

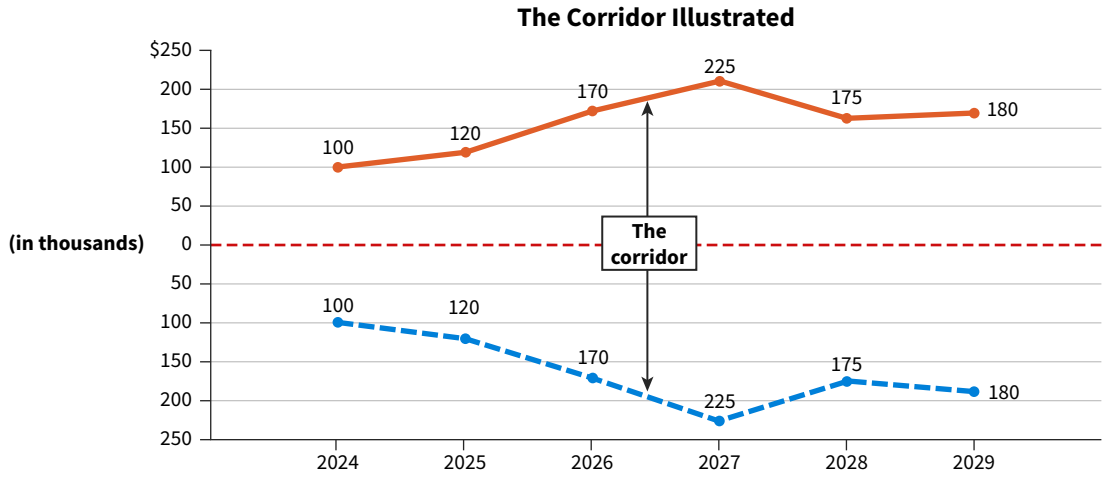
ILLUSTRATION 19.10
Computation of the Corridor

Beginning-of-the-Year Balances	Projected Benefit Obligation	Market-Related Asset Value	Corridor* +/−10%
2024	$1,000,000	$ 900,000	$100,000
2025	1,200,000	1,100,000	120,000
2026	1,300,000	1,700,000	170,000
2027	1,500,000	2,250,000	225,000
2028	1,700,000	1,750,000	175,000
2029	1,800,000	1,700,000	180,000

*The corridor becomes 10% of the larger (in red type) of the projected benefit obligation or the market-related asset value.

How the corridor works becomes apparent when we portray the data graphically, as in **Illustration 19.11**.

ILLUSTRATION 19.11 Graphic Illustration of the Corridor



If the balance in the Accumulated OCI account related to gains and losses stays within the upper and lower limits of the corridor, no amortization is required. In that case, Callaway carries forward unchanged the accumulated OCI related to gains and losses.

If amortization is required, the minimum amortization is calculated as follows.

$$\frac{\text{Excess of Accumulated OCI Above the Corridor Amount}}{\text{Average Remaining Service Period of Employees}} = \text{Amortization Amount}$$

Callaway may use any systematic method of amortization of gains and losses in lieu of the minimum, provided it is greater than the minimum. It must use the method consistently for both gains and losses, and must disclose the amortization method used.

Example of Gains/Losses

In applying the corridor, companies should include amortization of the net gain or loss as a component of pension expense only if, at the **beginning of the year**, the net gain or loss

in Accumulated OCI exceeded the corridor. If amortization is required, pension expense is impacted as follows.

Amortization of net gain → **Decrease** in pension expense
Amortization of net loss → **Increase** in pension expense

If no net gain or loss exists in Accumulated OCI at the beginning of the period, the company cannot recognize gains or losses in pension expense in that period.

Example 19.8
Amortization

FACTS Lasso, Inc. has the following information related to its pension plan.

	Beginning of the Year		
	2025	**2026**	**2027**
Projected benefit obligation	$2,100,000	$2,600,000	$2,900,000
Market-related asset value	2,600,000	2,800,000	2,700,000

Lasso recorded in Other Comprehensive Income actuarial **losses** of $400,000 in 2025 and $300,000 in 2026. Lasso has no gains or losses at the beginning of 2025.

QUESTION What minimum amount of amortization will Lasso record in 2025, 2026, and 2027? Assume the average remaining service lives for all employees is 5.5 years.

SOLUTION

The schedule to amortize the net gain or loss is as follows.

Year	Projected Benefit Obligation[a]	Plan Assets[a]	Corridor[b]	Accumulated OCI (G/L)[a]	Minimum Amortization of Loss (For Current Year)
2025	$2,100,000	$2,600,000	$260,000	$ 0	$ 0
2026	2,600,000	2,800,000	280,000	400,000	21,818[c]
2027	2,900,000	2,700,000	290,000	678,182[d]	70,579[d]

[a]All as of the beginning of the period.
[b]10% of the greater of projected benefit obligation or plan assets' market-related value.
[c]Calculation of amortization of net loss for 2026: ($400,000 − $280,000) ÷ 5.5 years = $21,818 amortization, will increase pension expense.
[d]Calculation of amortization of net loss for 2027 is a two-step process:

1. Calculate the updated balance in Accumulated OCI (G/L):

Net loss for 2026	$400,000
Less: 2026 amortization	21,818
Ending net loss balance 2026	378,182
Loss increase for 2027	300,000
Updated net loss balance for 2027	$678,182

2. Calculate amortization of net loss for 2027: ($678,182 − $290,000) ÷ 5.5 years = $70,579 amortization, will increase pension expense.

The loss recognized in 2026 increased pension expense by $21,818. This amount is small in comparison with the total loss of $400,000. It indicates that the corridor approach dampens the effects (reduces volatility) of these gains and losses on pension expense.

The rationale for the corridor is that gains and losses result from refinements in estimates as well as real changes in economic value. Over time, some of these gains and losses will offset one another. Therefore, in Example 19.8, it seems reasonable that Lasso should not fully recognize gains and losses as a component of pension expense in the period in which they arise.

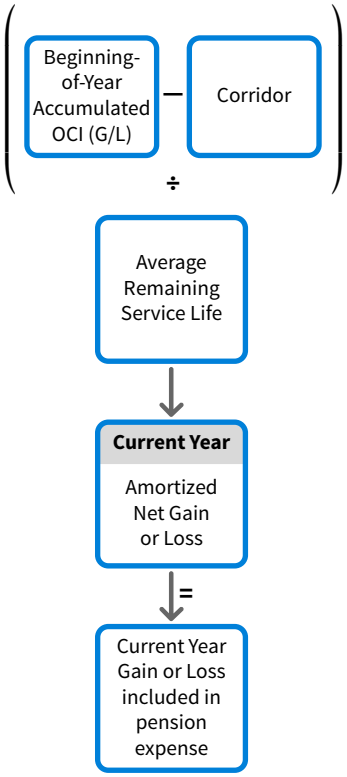
However, Lasso should immediately recognize in net income certain gains and losses—if they arise from a single occurrence not directly related to the operation of the pension plan and not in the ordinary course of the employer's business. For

example, a gain or loss that is directly related to a plant closing, a disposal of a business component, or a similar event that greatly affects the size of the employee work force should be recognized as a part of the gain or loss associated with that event.

At one time, **Bethlehem Steel** reported a quarterly loss of $477 million. A great deal of this loss was attributable to future estimated benefits payable to workers who were permanently laid off. In this situation, the loss should be treated as an adjustment to the gain or loss on the plant closing and should **not** affect pension cost for the current or future periods.

To summarize, the difference between the actual return on plan assets and the expected return on plan assets is the **unexpected asset gain or loss**.

- The unexpected gain or loss defers the difference between the actual return and expected return on plan assets in computing current-year pension expense.
- As a result, **it is really the expected return on plan assets** (**not the actual return**) **that determines current pension expense**.



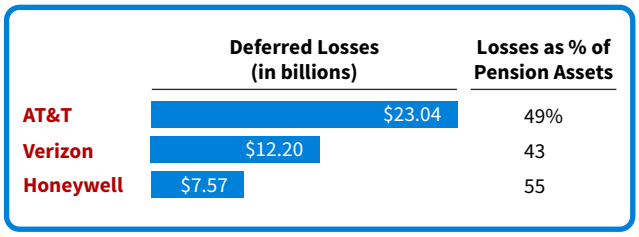
Companies determine the amortized net gain or loss by amortizing the Accumulated OCI amount related to net gain or loss at the beginning of the year subject to the corridor limitation.

In other words, **if the accumulated gain or loss (including that for the assets and the liability) is greater than the corridor**, **these net gains and losses are subject to amortization**. Lasso (in Example 19.8) computed this minimum amortization by dividing the net gains or losses subject to amortization by the average remaining service period. When the current-year unexpected gain or loss is combined with the amortized net gain or loss, we determine the current-year gain or loss.[12]

Accounting Matters — Bye Bye Corridor

Consider a company like **General Motors (GM)**, which carries over $6 billion of unamortized actuarial losses related to pension obligations in the equity section of its balance sheet. These accumulated losses, using the corridor approach, will drag down future earnings as they are amortized into net income. Most recently, GM expected a $258 million charge to income for such losses. Is there an alternative to the corridor approach? Yes! Companies may select any method of accounting for deferred losses as long as it is systematic, rational, and consistently applied, and meets a minimum for recognition in the income statement.

Some notable companies, including **AT&T**, **Verizon Communications**, and **Honeywell International**, have shifted away from the corridor approach in favor of mark-to-market, recognizing actuarial gains and losses immediately in net income in the year incurred (summarized in the following chart).



Companies argue this approach provides more transparency for losses that will directly affect pension expense in the current period. However, there is a silver lining for these companies – they can charge a good portion of these accumulated losses to past years when they make the switch.

When AT&T changed its accounting policy to immediate recognition of actuarial losses, it restated its prior-year financial statements. This restatement moved the prior year to a net loss of $2.6 billion instead of a profit of $12.9 billion. But investors are focused on the future, not the past! Charging accumulated losses to a prior year led to a much smaller pension expense going forward by avoiding the drag on earnings from the corridor amortization. Other companies, including **Ford**, **UPS**, and **Coca-Cola**, also got on the mark-to-market bandwagon, taking earnings hits upon adoption.

Although earnings in the future will probably be more volatile due to fluctuations in pension expense, more companies are willing to move in the direction of immediate expensing to eliminate large deferred losses which would be a drag on future income.

Sources: SEI, "Why Are Pension Plan Sponsors Switching to Mark-to-Market Accounting?" (October 2013); B. Snavely, "Ford Earnings to Take $2 Billion Hit on Accounting Change," *Detroit Free Press* (January 20, 2017); and M. Mauer, "CFOs Could Change Pension Accounting Style to Avoid Drag on Earnings," *Wall Street Journal* (February 26, 2020).

[12]In essence, these gains and losses are subject to **triple** smoothing. That is, companies first smooth the asset gain or loss by using the expected return. Second, they do not amortize the accumulated gain or loss at the beginning of the year unless it is greater than the corridor. Finally, they spread the excess over the remaining service life of existing employees.

Example 19.9
2027 Worksheet

FACTS Continuing the Zarle Company examples, the following facts apply to its pension plan for 2027.

- Annual service cost is $13,000.
- Settlement rate is 10%; expected return on plan assets is 10%.
- Actual return on plan assets is $12,000.
- Amortization of prior service cost (PSC) is $20,800.
- Annual funding contributions are $24,000.
- Benefits paid to retirees during the year are $10,500.
- Changes in actuarial assumptions resulted in an end-of-year projected benefit obligation of $265,000.

QUESTION What is the pension worksheet you would prepare for Zarle's pension plan in 2027?

SOLUTION

The following worksheet presents all of Zarle's 2027 pension entries and related information.

	A	B	C	D	E	F	G	H
1	**Pension Worksheet—2027**							
2		**General Journal Entries**					**Memo Record**	
3	**Items**	**Annual Pension Expense**	**Cash**	**Other Comprehensive Income — Prior Service Cost**	**Other Comprehensive Income — Gains/ Losses**	**Pension Asset/ Liability**	**Projected Benefit Obligation**	**Plan Assets**
4	Balance, Jan. 1, 2027					$ 78,600 Cr.	$212,700 Cr.	$134,100 Dr.
5	(m) Service cost	$13,000 Dr.					13,000 Cr.	
6	(n) Interest cost	21,270 Dr.					21,270 Cr.	
7	(o) Actual return	12,000 Cr.						12,000 Dr.
8	(p) Unexpected loss	1,410 Cr.			$ 1,410 Dr.			
9	(q) Amortization of PSC	20,800 Dr.		$20,800 Cr.				
10	(r) Contributions		$24,000 Cr.					24,000 Dr.
11	(s) Benefits						10,500 Dr.	10,500 Cr.
12	(t) Liability increase				28,530 Dr.		28,530 Cr.	
13	Journal entry for 2027	$41,660 Dr.	$24,000 Cr.	20,800 Cr.	29,940 Dr.	26,800 Cr.		
14	Accumulated OCI, Dec. 31, 2026			52,800 Dr.	0			
15	Balance, Dec. 31, 2027*			$32,000 Dr.	$29,940 Dr.	$105,400 Cr.	$265,000 Cr.	$159,600 Dr.
16	*Accumulated OCI (PSC)	$32,000 Dr.						
17	Accumulated OCI (G/L)	29,940 Dr.						
18	Accumulated OCI, Dec. 31, 2027	$61,940 Dr.						

In the worksheet in Example 19.9, the first line records the beginning balances that relate to the pension plan. In this case, Zarle's beginning balances are the ending balances from its 2026 pension worksheet in Example 19.6.

- Entries (m), (n), (o), (q), (r), and (s) are similar to the corresponding entries in 2025 or 2026.
- Entries (o) and (p) are related. We explained the recording of the actual return in entry (o) in both 2025 and 2026; it is recorded similarly in 2027. In both 2025 and 2026, Zarle assumed that the actual return on plan assets was equal to the expected return on plan assets. In 2027, the expected return of $13,410 (**calculated in Example 19.7**) is higher than the actual return of $12,000, resulting in an asset loss which decreases pension expense.
- Entry (t) records the change in the projected benefit obligation resulting from the change in the actuarial assumptions. The actuary has now computed the ending balance to be $265,000.

Zarle defers the unexpected asset loss of $1,410 ($13,410 − $12,000) by debiting the Other Comprehensive Income (G/L) account and crediting Pension Expense to smooth pension expense. **As a result of this adjustment, the expected return on the plan assets is the amount actually used to compute pension expense.** Given the PBO balance at December 31, 2026, and the related transactions during 2026, the PBO balance to date is computed as shown in **Illustration 19.12**.

December 31, 2026, PBO balance	$212,700
Service cost [entry (m)]	13,000
Interest cost [entry (n)]	21,270
Benefits paid [entry (s)]	(10,500)
December 31, 2027, PBO balance (before liability Increases)	$236,470

ILLUSTRATION 19.12 Projected Benefit Obligation Balance (Unadjusted)

The difference between the ending balance of $265,000 and the balance of $236,470 before the liability increase is $28,530 ($265,000 − $236,470). This $28,530 (Entry t) increase in the employer's liability is an unexpected loss.

Continuing with Example 19.9, the journal entry on December 31, 2027, to record the pension information is as follows.

Pension Expense	41,660	
Other Comprehensive Income (G/L)	29,940	
Cash		24,000
Other Comprehensive Income (PSC)		20,800
Pension Asset/Liability		26,800

Funded Status—2027

As the 2027 worksheet indicates, the $105,400 balance in the Pension Asset/Liability account at December 31, 2027, is equal to the net of the balances in the memo accounts. **Illustration 19.13** shows this computation.

Projected benefit obligation (Credit)	$(265,000)
Plan assets at fair value (Debit)	159,600
Pension asset/liability	$(105,400)

ILLUSTRATION 19.13 Pension Reconciliation Schedule—December 31, 2027

FACTS Information for the Zarle Company pension plan in 2028 is as follows.

- Service cost is $16,000.
- Settlement rate is 10%; expected rate of return is 10%.
- Actual return on plan assets is $22,000.
- Amortization of prior service cost is $17,600.
- Annual funding contributions are $27,000.
- Benefits paid to retirees during the year are $18,000.
- Average service life of all covered employees is 20 years.

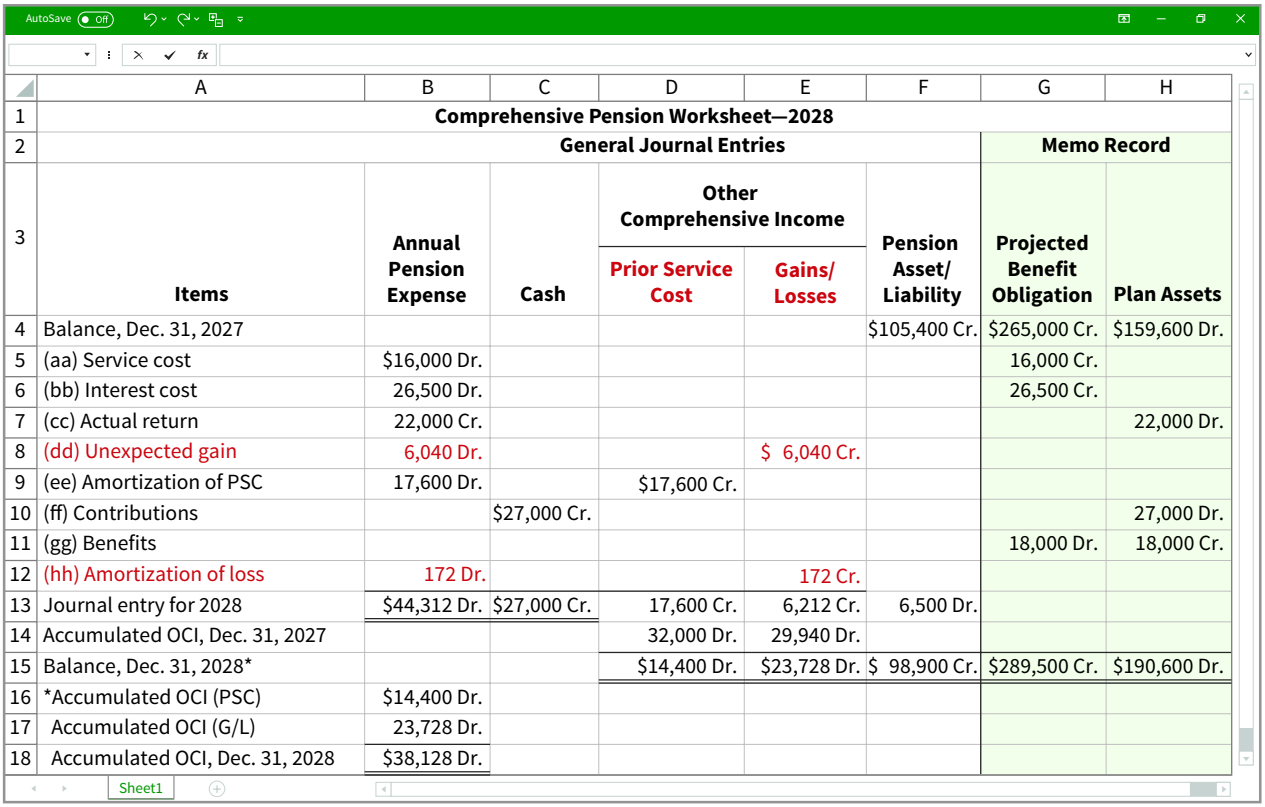
INSTRUCTIONS

Prepare the pension worksheet for Zarle's pension plan in 2028.

Put It into Practice LO 19.4
Prepare 2028 Pension Worksheet

SOLUTION

The worksheet, to facilitate accumulation and recording of the components of pension expense and maintenance of amounts related to the pension plan, is as follows.



	A	B	C	D	E	F	G	H
1	**Comprehensive Pension Worksheet—2028**							
2		**General Journal Entries**					**Memo Record**	
3	**Items**	**Annual Pension Expense**	**Cash**	**Other Comprehensive Income**		**Pension Asset/ Liability**	**Projected Benefit Obligation**	**Plan Assets**
				Prior Service Cost	**Gains/ Losses**			
4	Balance, Dec. 31, 2027					$105,400 Cr.	$265,000 Cr.	$159,600 Dr.
5	(aa) Service cost	$16,000 Dr.					16,000 Cr.	
6	(bb) Interest cost	26,500 Dr.					26,500 Cr.	
7	(cc) Actual return	22,000 Cr.						22,000 Dr.
8	(dd) Unexpected gain	6,040 Dr.			$ 6,040 Cr.			
9	(ee) Amortization of PSC	17,600 Dr.		$17,600 Cr.				
10	(ff) Contributions		$27,000 Cr.					27,000 Dr.
11	(gg) Benefits						18,000 Dr.	18,000 Cr.
12	(hh) Amortization of loss	172 Dr.			172 Cr.			
13	Journal entry for 2028	$44,312 Dr.	$27,000 Cr.	17,600 Cr.	6,212 Cr.	6,500 Dr.		
14	Accumulated OCI, Dec. 31, 2027			32,000 Dr.	29,940 Dr.			
15	Balance, Dec. 31, 2028*			$14,400 Dr.	$23,728 Dr.	$ 98,900 Cr.	$289,500 Cr.	$190,600 Dr.
16	*Accumulated OCI (PSC)	$14,400 Dr.						
17	Accumulated OCI (G/L)	23,728 Dr.						
18	Accumulated OCI, Dec. 31, 2028	$38,128 Dr.						

Beginning-of-the-year 2028 account balances are the December 31, 2027, balances from Zarle's 2027 pension worksheet in Example 19.9.

- Entries (aa) through (gg) are similar to the corresponding entries previously explained in the prior years' worksheets, with the exception of entry (dd). In 2027, the expected return on plan assets exceeded the actual return, producing an unexpected loss. In 2028, the unexpected gain or loss is calculated as follows.

$$\text{Expected return} = \$159{,}600 \times .10 = \$15{,}960$$

$22,000 actual return is greater than the expected return ($15,960) by an amount of $6,040, an asset gain (entry dd)

By netting the gain of $6,040 against the actual return of $22,000, pension expense is affected only by the expected return of $15,960.

- A new entry (hh) in Zarle's worksheet results from application of the corridor test on the accumulated balance of net gain or loss in accumulated other comprehensive income. Zarle begins 2028 with a net loss balance of $29,940. The company applies the corridor test in 2028 to determine whether the balance is excessive and should be amortized. In 2028, the corridor is 10% of the larger of the beginning-of-the-year projected benefit obligation of $265,000 or the plan asset's $159,600 market-related asset value (assumed to be fair value). The corridor for 2028 is $26,500 ($265,000 × .10). The net loss balance in Accumulated OCI of $29,940 is greater than the corridor, therefore, the excess must be amortized as follows.

$$\frac{\$29{,}940 - \$26{,}500}{20 \text{ years}} = \$172 \text{ amortization for 2028}$$

- Amortization of a net loss increases pension expense. In the 2028 pension worksheet, Zarle debits Pension Expense for $172 and credits that amount to Other Comprehensive Income (G/L).

Zarle records pension expense for 2028 as follows.

2028

Pension Expense	44,312	
Pension Asset/Liability	6,500	
Cash		27,000
Other Comprehensive Income (G/L)		6,212
Other Comprehensive Income (PSC)		17,600

19.5 Reporting Pension Plans in Financial Statements

LEARNING OBJECTIVE 5

Describe the requirements for reporting pension plans in financial statements.

As you might suspect, a phenomenon as significant and complex as pensions involves extensive reporting and disclosure requirements. We will cover these requirements in four categories:

1. Assets and liabilities.
2. Net income.
3. Comprehensive income.
4. The notes to the financial statements.

Assets and Liabilities

Companies must recognize on their balance sheet the overfunded (pension asset) or underfunded (pension liability) status of their defined benefit pension plan. The overfunded or underfunded status is measured as the difference between the fair value of the plan assets and the projected benefit obligation.[13] In Zarle's case, the projected benefit obligation is greater than the plan assets at December 31, 2028. As a result, Zarle reports a net pension liability. The current portion of a net pension liability represents the amount of benefit payments to be paid in the next 12 months (or operating cycle, if longer), if that amount cannot be funded from existing plan assets. Otherwise, the pension liability is classified as a noncurrent liability.

- In the event that the fair value of plan assets exceeds the projected benefit obligation (the plan is overfunded), companies will report a net pension asset.
- However, no portion of a pension asset is reported as a current asset. That is, the excess of the fair value of the plan assets over the benefit obligation is classified as a noncurrent asset.

The rationale for noncurrent classification is that the pension plan assets are restricted to fund the projected benefit obligation.

Net Income

Pension expense includes multiple components (service cost, interest cost, return on assets, and amortization of various amounts such as prior service cost and gains and losses) deferred from prior periods. The FASB requires presentation of the components of pension expense as follows.

[13] Some companies have two or more pension plans. The Board takes the position that **all overfunded plans should be combined** and shown as a pension asset on the balance sheet. Similarly, if the company has two or more underfunded plans, the **underfunded plans are combined and shown as one amount** on the balance sheet.

The FASB rejected the alternative of combining **all** plans and representing the net amount as a single net asset or net liability. The rationale: A company does not have the ability to offset excess assets of one plan against underfunded obligations of another plan. Furthermore, netting all plans is inappropriate because offsetting assets and liabilities is not permitted under GAAP unless a right of offset exists.

1. Service cost component is reported as pension expense in income from operations (often as part of compensation expense).
2. Other components of pension expense are generally reported as one net amount in the "Other expenses and losses" section below income from operations. **[6]**

The rationale for this segregation is that presentation of pension expense as one amount combines amounts that are different in their predictive value, resulting in a presentation that is of limited value to financial statement users. The FASB indicated that service cost is the component that originates from employee service during the current period and has a significantly different effect in terms of information-usefulness compared to other pension expense components.

To illustrate the reporting of pension expense on the income statement, information from Zarle Company's 2028 worksheet (see Put It into Practice 19.4) is used. Zarle's worksheet indicates that service cost component of pension expense is $16,000, and other components of pension expense are $28,312 ($44,312 − $16,000). Assuming the following additional information for Zarle (sales revenue $2,000,000; cost of goods sold $1,500,000; other operating expenses, excluding pension expense related to service cost $110,000), **Illustration 19.14** presents Zarle's income statement for 2028.

ILLUSTRATION 19.14 Income Statement—2028

Zarle Company
Income Statement
For the Year Ended December 31, 2028

Sales revenue	$2,000,000
Cost of goods sold	1,500,000
Gross profit	500,000
Pension expense (service cost)	16,000
Other operating expenses	110,000
Income from operations	374,000
Other expenses and losses	
Pension expense (other components)	28,312
Net income	$ 345,688

If Zarle does not report income from operations, it then has the discretion to report the other components of pension expense wherever it is appropriate. Such presentation should convey the underlying nature of these components and be separated from the service cost component. *For homework purposes, assume that the income statement includes an operating income subtotal.*

Comprehensive Income

In addition to the pension expense reported on the income statement, companies are also required to recognize actuarial gains and losses and prior service costs that originate in the current period in other comprehensive income. Amounts that are not recognized as part of pension expense are recognized as increases or decreases in other comprehensive income.

- The Board requires that the prior service cost arising in the year of the amendment (which increases the projected benefit obligation) be recognized by an offsetting debit to other comprehensive income.
- By recognizing both actuarial gains and losses and prior service cost as part of other comprehensive income, the Board believes that the usefulness of financial statements is enhanced.

To illustrate, Zarle Company's 2028 worksheet is used. Zarle's worksheet indicates that both prior service cost of $17,600 and actuarial gains of $6,212 ($6,040 + $172) are amortized to pension expense in 2028. The increase in other comprehensive income of $23,812 is computed as shown in **Illustration 19.15**.

Prior service cost amortization	$17,600
Gains and losses amortization	6,212
Other comprehensive income	$23,812

ILLUSTRATION 19.15 Computation of Other Comprehensive Income

Illustration 19.16 shows the computation of comprehensive income for 2028 for Zarle Company.

Net income	$345,688
Other comprehensive income	23,812
Comprehensive income	$369,500

ILLUSTRATION 19.16 Computation of Comprehensive Income

As discussed in Chapter 3, the components of other comprehensive income must be reported in one of two ways: (1) in a second income statement, or (2) in a combined statement of comprehensive income. Regardless of the format used, net income must be added to other comprehensive income to arrive at comprehensive income. *For homework purposes, use the second income statement approach unless stated otherwise.* Earnings per share information related to comprehensive income is not required.

To illustrate the second income statement approach, assume that Zarle Company has reported **a traditional income statement**. The comprehensive income statement is then shown in **Illustration 19.17**.

Zarle Company
Comprehensive Income Statement
For the Year Ended December 31, 2028

Net income		$345,688
Other comprehensive loss		
Actuarial liability loss	$ 6,212	
Prior service cost	17,600	23,812
Comprehensive income		$369,500

ILLUSTRATION 19.17 Comprehensive Income Reporting

Illustration 19.18 shows the computation of "Accumulated other comprehensive loss" as reported in stockholders' equity at December 31, 2028.

Accumulated other comprehensive loss, January 1, 2028	$61,940
Other comprehensive income	23,812
Accumulated other comprehensive loss, December 31, 2028	$38,128

ILLUSTRATION 19.18 Computation of Accumulated Other Comprehensive Income

Regardless of the display format for the income statement, the accumulated other comprehensive loss is reported in the stockholders' equity section of the balance sheet of Zarle Company as shown in **Illustration 19.19**. (Illustration 19.19 uses assumed data for the common stock and retained earnings information.)

Zarle Company
Balance Sheet
As of December 31, 2028
(Stockholders' Equity Section)

Stockholders' equity	
Common stock	$100,000
Retained earnings	60,000
Accumulated other comprehensive loss	38,128
Total stockholders' equity	$121,872

ILLUSTRATION 19.19 Reporting of Accumulated OCI

Underlying Concepts

Does it make a difference to users of financial statements whether companies recognize pension information in the financial statements or disclose it only in the notes? The FASB was unsure, so in accord with the full disclosure principle, it decided to provide extensive pension plan disclosures.

By providing information on the components of comprehensive income as well as total accumulated other comprehensive income, the company communicates all changes in net assets.

In this illustration, it is assumed that the accumulated other comprehensive income at January 1, 2028, is not adjusted for the amortization of any prior service cost or actuarial gains and losses that would change pension expense. As discussed in the earlier examples, these items will be amortized into pension expense in future periods.

Within the Notes to the Financial Statements

Pension plans are frequently important to understanding a company's financial position, results of operations, and cash flows. Therefore, a company discloses the information shown in **Illustration 19.20**, either in the body of the financial statements or in the notes (see **Underlying Concepts**). [7]

ILLUSTRATION 19.20 Summary of Pension Plan Disclosures

Information Disclosed	Rationale
1. **Schedule** showing all the major components of pension expense.	Information provided about the components of pension expense helps users better understand how a company determines pension expense. It also is useful in forecasting a company's net income.
2. **Reconciliation** showing how the projected benefit obligation and the fair value of the plan assets changed from the beginning to the end of the period.	Disclosing the projected benefit obligation, the fair value of the plan assets, and changes in them should help users understand the economics underlying the obligations and resources of these plans. Explaining the changes in the projected benefit obligation and fair value of plan assets in the form of a reconciliation provides a more complete disclosure and makes the financial statements more understandable.
3. **Disclosure of the rates** used in measuring the benefit amounts (discount rate, expected return on plan assets, rate of compensation).	Disclosure of these rates permits users to determine the reasonableness of the assumptions applied in measuring the pension liability and pension expense.
4. **Table indicating the allocation of pension plan assets by category** (equity securities, debt securities, real estate, and other assets), and showing the percentage of the fair value to total plan assets. In addition, a company must include a narrative description of investment policies and strategies, including the target allocation percentages (if used by the company).[14]	Such information helps financial statement users evaluate the pension plan's exposure to market risk and possible cash flow demands on the company. It also will help users better assess the reasonableness of the company's expected rate of return assumption.
5. **Expected benefit payments** to be paid to current plan participants for each of the next five fiscal years and in the aggregate for the five fiscal years thereafter. Also required is disclosure of a company's best **estimate of expected contributions** to be paid to the plan during the next year.	These disclosures provide information related to the cash outflows of the company. With this information, financial statement users can better understand the potential cash outflows related to the pension plan. They can better assess the liquidity and solvency of the company, which helps in assessing the company's overall financial flexibility.
6. **Nature and amount of changes** in plan assets and benefit obligations recognized in net income and in other comprehensive income of each period.	This disclosure provides information on pension elements affecting the projected benefit obligation and plan assets and on whether those amounts have been recognized in income or deferred to future periods.
7. **Accumulated amount of changes** in plan assets and benefit obligations that have been recognized in other comprehensive income.	This information indicates the pension-related balances recognized in stockholders' equity, which could affect future income.

In summary, the disclosure requirements are extensive, and purposely so. One factor that has been a challenge for useful pension reporting has been the lack of consistent terminology. Furthermore, a substantial amount of offsetting is inherent in the measurement of pension expense and the pension liability. These disclosure requirements are designed to address these concerns and take some of the mystery out of pension reporting.

[14] At a minimum, companies must disclose the amount of assets allocated to equities, government and corporate bonds, mortgage-backed securities, derivatives, and real estate. Also, information on concentrations of risk must be explained. Finally, fair value disclosures would be required, including classification of amounts into levels of the fair value hierarchy. [8]

Illustration 19.21 shows the note disclosure of Zarle's pension plan for 2028. Note that this example assumes that the pension liability is noncurrent and that the 2029 adjustment for amortization of the net gain or loss and amortization of prior service cost are the same as 2028.

ILLUSTRATION 19.21 Minimum Note Disclosure of Pension Plan, Zarle Company, 2028

Zarle Company
Notes to the Financial Statements

Note D. The company has a pension plan covering substantially all of its employees. The plan is noncontributory and provided pension benefits that are based on the employee's compensation during the three years immediately preceding retirement. The pension plan's assets consist of cash, stocks and bonds. The company's funding policy is consistent with the relevant government (ERISA) and tax regulations.

Pension expense for 2028 is comprised of the following components of pension cost.

Service cost	$ 16,000	
interest on projected benefit obligation	26,500	
Expected return on plan assets	(15,960)	
Amortization of prior service cost	17,600	
Amortization of net loss	172	
Pension expense		$44,312

Components of pension expense

Other changes in plan assets and benefit obligations recognized in other comprehensive income

Net actuarial gain	$ 6,212	
Amortization of prior service cost	17,600	
Total recognized in other comprehensive income		(23,812)
Total recognized in pension expense and other comprehensive income		$20,500

Amounts recognized in other comprehensive income

The estimated net actuarial loss and prior service cost for the defined benefit pension plan that will be amortized from accumulated other comprehensive income into pension expense over the next year are estimated to be the same as this year.

The amount recognized as a long-term liability in the balance sheet is as follows:

Noncurrent liability	
Pension liability	$98,900

The amounts recognized in accumulated other comprehensive income related to pensions consist of:

Net actuarial loss	$23,728
Prior service cost	14,400
Total	$38,128

Amounts recognized in the balance sheet

Change in benefit obligation	
Benefit obligation at beginning of year	$265,000
Service cost	16,000
Interest cost	26,500
Amendments (Prior service cost)	-0-
Actuarial gain	-0-
Benefits paid	(18,000)
Benefit obligation at end of year	289,500
Change in plan assets	
Fair value of plan assets at beginning of year	159,600
Actual return on plan assets	22,000
Contributions	27,000
Benefits paid	(18,000)
Fair value of plan assets at end of year	190,600
Funded status (liability)	$ 98,900

Reconcillations of pension liability and plan assets

Funded status of plan

The weighted-average discount rate used in determining the 2028 projected benefit obligation was 10%. The rate of increase in future compensation levels used in computing the 2028 projected benefit obligation was 4.5%. The weighted-average expected long-term rate of return on the plan's assets was 10%.

Rates used to estimate plan elements

Illustrations 19.22 and 19.23 present four-year summaries for the Zarle example related to the key disclosures of pension expense and the funded status of the pension plan (based on the information from the worksheets in Examples 19.4, 19.6, and 19.9, and Put It into Practice 19.4).

ILLUSTRATION 19.22 Summary of Expense Components—2025, 2026, 2027, 2028

Zarle Company				
	2025	**2026**	**2027**	**2028**
Components of pension expense				
Service cost	$ 9,000	$ 9,500	$13,000	$16,000
Interest cost	10,000	19,200	21,270	26,500
Expected return on plan assets	(10,000)	(11,100)	(13,410)*	(15,960)*
Amortization of prior service cost	-0-	27,200	20,800	17,600
Amortization of loss	-0-	-0-	-0-	172
Pension expense	$ 9,000	$ 44,800	$41,660	$44,312

*Note that the expected return must be disclosed, not the actual return. In 2027, the expected return is $13,410, which is the actual gain ($12,000) adjusted by the unrecognized loss, ($1,410). In 2028, the expected return is $15,960, which is the actual gain ($22,000) adjusted by the unrecognized gain ($6,040).

ILLUSTRATION 19.23 Pension Reconciliation for Zarle Company—2025, 2026, 2027, 2028

Zarle Company Pension Reconcillation				
	2025	**2026**	**2027**	**2028**
Change in benefit obligation				
Benefit obligation at beginning of year	$100,000	$112,000	$212,700	$ 265,000
Service cost	9,000	9,500	13,000	16,000
Interest cost	10,000	19,200	21,270	26,500
Amendments (Prior service cost)	-0-	80,000	-0-	-0-
Actuarial loss	-0-	-0-	28,530	-0-
Benefits paid	(7,000)	(8,000)	(10,500)	(18,000)
Benefit obligation at end of year	112,000	212,700	265,000	289,500
Change in plan assets				
Fair value of plan assets at beginning of year	100,000	111,000	134,100	159,600
Actual return plan assets	10,000	11,100	12,000	22,000
Contributions	8,000	20,000	24,000	27,000
Benefits paid	(7,000)	(8,000)	(10,500)	(18,000)
Fair value of plan assets at end of year	111,000	134,100	159,600	190,600
Funded status (Pension asset/liability)	$ (1,000)	$ (78,600)	$(105,400)	$(98,900)

Underlying Concepts

Many plans are underfunded but still quite viable. For example, **General Motors** recently reported a $5.9 billion shortfall, but also had earnings of $6.7 billion and a good net worth. Thus, the going concern assumption permits us to ignore pension underfunding in some cases because in the long run they are not significant.

Special Issues

The Pension Reform Act of 1974

A classic example of the unfortunate consequences of an underfunded pension plan is the 1963 shutdown of the **Studebaker Automobile** operations in South Bend, Indiana, in which 4,500 workers lost 85% of their vested benefits. As a result of such situations, the Employee Retirement Income Security Act of 1974—**ERISA**—was passed.

- ERISA affects virtually every private retirement plan in the United States.
- It attempts to safeguard employees' pension rights by mandating many pension plan requirements, including minimum funding, participation, and vesting (see **Underlying Concepts**).

These requirements can influence the employers' cash flows significantly. Under this legislation, annual funding is no longer discretionary. An employer now must fund the plan in accordance with an actuarial funding method that over time will be sufficient to pay for all

pension obligations. If companies do not fund their plans in a reasonable manner, they may be subject to fines and/or loss of tax deductions.[15]

The law requires plan administrators to publish a comprehensive description and summary of their plans, along with detailed annual reports that include many supplementary schedules and statements.

Another important provision of the act is the creation of the **Pension Benefit Guaranty Corporation (PBGC)**. **The PBGC's purpose is to administer terminated plans** and to impose liens on an employer's assets for certain unfunded pension liabilities.

- If a company terminates its pension plan, the PBGC can effectively impose a lien against the employer's assets for the excess of the present value of guaranteed vested benefits over the pension fund assets.
- This lien generally has had the status of a tax lien. It takes priority over most other creditorship claims.

This section of the act gives the PBGC the power to force an involuntary termination of a pension plan whenever the risks related to nonpayment of the pension obligation seem too great. Because ERISA restricts to 30% of net worth the lien that the PBGC can impose, the PBGC must monitor all plans to ensure that net worth is sufficient to meet the pension benefit obligations.

A large number of terminated plans have caused the PBGC to pay out substantial benefits. Currently, the PBGC receives its funding from employers, who contribute a certain dollar amount for each employee covered under the plan.[16]

Accounting Matters

Who Guarantees the Guarantor?

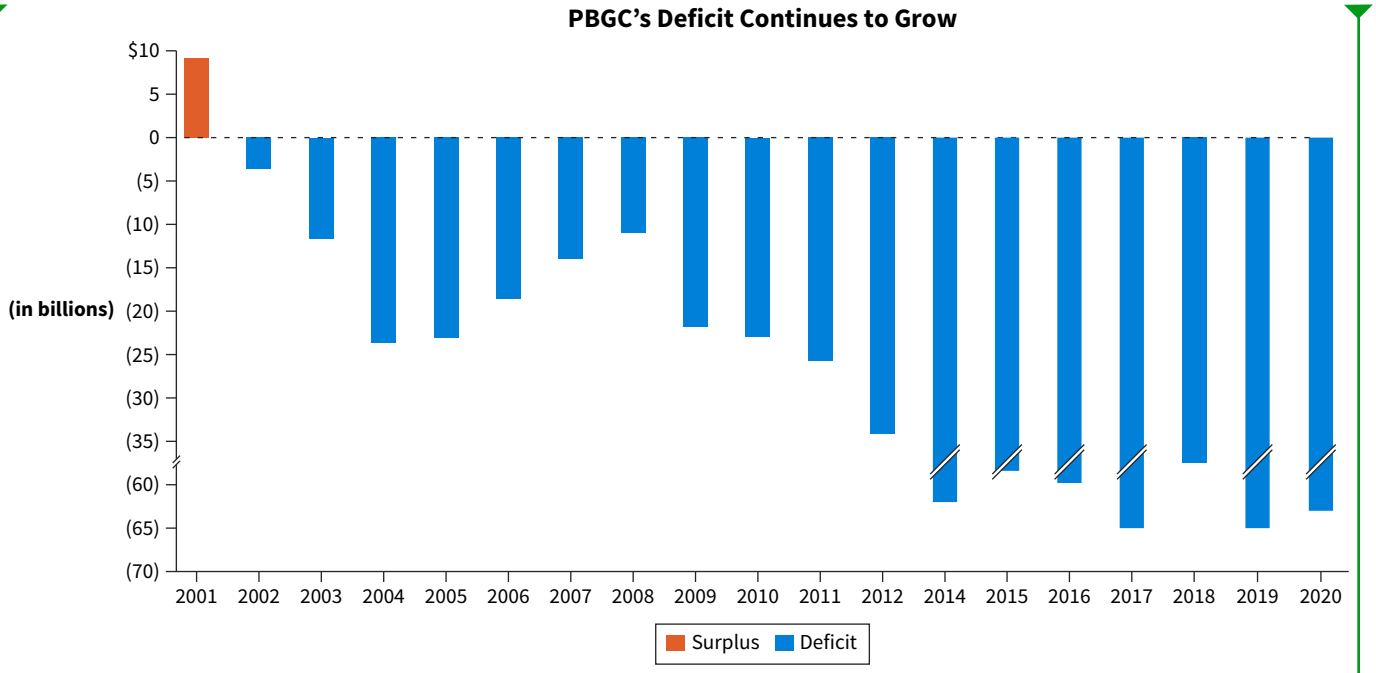
The **Pension Benefit Guaranty Corporation (PBGC)** in a recent annual report indicates that its primary mission is to encourage the continuation and maintenance of voluntary private pension plans. It's an obligation which the PBGC takes seriously. However, the trends are ominous:

- Americans today are spending more years in retirement. They're healthier and more active, which is great news. Unfortunately, pensions haven't kept up.
- Many businesses, for competitive and other reasons, continue to reduce their support for retirement plans. Many have switched from a defined benefit plan to a defined contribution plan, which costs less and comes with fewer obligations. Others offer lump-sum cash payments to employees or retirees to settle the employer's obligations.
- Left on their own, many people invest less than they should during their working years. Coupled with higher fees and lower returns on their individual savings, this can lead to trouble.
- Many people defer retirement by working longer, but still don't have enough money for retirement—and they're worried. One poll cited by the Senate Health, Education, Labor, and Pensions Committee says that 92% of people think there's a retirement crisis. They're right to be concerned.

Add to these concerns that obligations in pension plans today greatly exceed pension assets. Finally, the PBGC has a problem as well—a large deficit in its accounts. The following chart indicates that downward spiral in the net worth of the PBGC over the last 15 years as pension payments have exceeded premiums received.

[15] In 2006, Congress passed the Pension Protection Act. This law has many provisions. One important aspect of the act is that it forced many companies to expedite their contributions to their pension plans. One group estimates that companies in the S&P 500 had to contribute $47 billion to their pension plans when the new rules were fully phased in for 2006. That amount is about 57% more than the $30 billion that companies were expecting to contribute to their plans that year. Subsequently, Congress continues to provide pension funding relief. For example, in the "Moving Ahead for Progress in the 21st Century" Act (enacted July 6, 2012), companies can use a higher discount rate based on high-grade bond yields averaged over 25 years, which helps reduce the pension liability and required contributions.

[16] **Pan American Airlines** is a good illustration of how difficult it is to assess when to terminate. When Pan Am filed for bankruptcy in 1991, it had a pension liability of $900 million. From 1983 to 1991, the IRS gave it six waivers so it did not have to make contributions. When Pan Am terminated the plan, there was little net worth left upon which to impose a lien. An additional accounting problem relates to the manner of disclosing the possible termination of a plan. For example, should Pan Am have disclosed a contingent liability for its struggling plan? At present this issue is unresolved, and considerable judgment is needed to analyze a company with these contingent liabilities.



Source: PBGC annual report.

Pension Terminations

A congressman at one time noted, "Employers are simply treating their employee pension plans like company piggy banks, to be raided at will." What this congressman was referring to is the practice of paying off the projected benefit obligation and pocketing any excess.

- ERISA prevents companies from recapturing excess assets unless they pay participants what is owed to them and then terminate the plan.
- As a result, companies were buying **annuities** to pay off the participants in the pension plan and then used the excess funds for other corporate purposes.[17]

For example, at one time, pension plan terminations netted $363 million for **Occidental Petroleum Corp.**, $95 million for **Stroh's Brewery Co.**, $58 million for **Kellogg Co.**, and $938 million for **Avaya** (a spinoff of **Lucent Technologies**). Recently, many large companies have terminated their pension plans and captured billions in surplus assets. The U.S. Treasury also benefits: Federal legislation requires companies to pay an excise tax of anywhere from 20% to 50% on the gains.[18]

[17]A question exists as to whose money it is. Some argue that the excess funds belong to the employees, not the employer. In addition, given that the funds have been reverting to the employer, critics charge that cost-of-living increases and the possibility of other increased benefits are reduced because companies will be reluctant to use those remaining funds to pay for such increases.

[18]Another way that companies have reduced their pension obligations is through adoption of **cash-balance plans**. These are **hybrid** plans combining features of defined benefit and defined contribution plans. Although these plans permit employees to transfer their pension benefits when they change employers (like a defined contribution plan), they are controversial because the change to a cash-balance plan often reduces benefits to older workers.

The accounting for cash-balance plans is similar to that for defined benefit plans, because employers bear the investment risk in cash-balance plans. however, when an employer adopts a cash-balance plan, the measurement of the future benefit obligation to employees generally is lower, compared to a traditional defined benefit plan. See A. T. Arcady and F. Mellors, "Cash-Balance Conversions," *Journal of Accountancy* (February 2000), pp. 22–28.

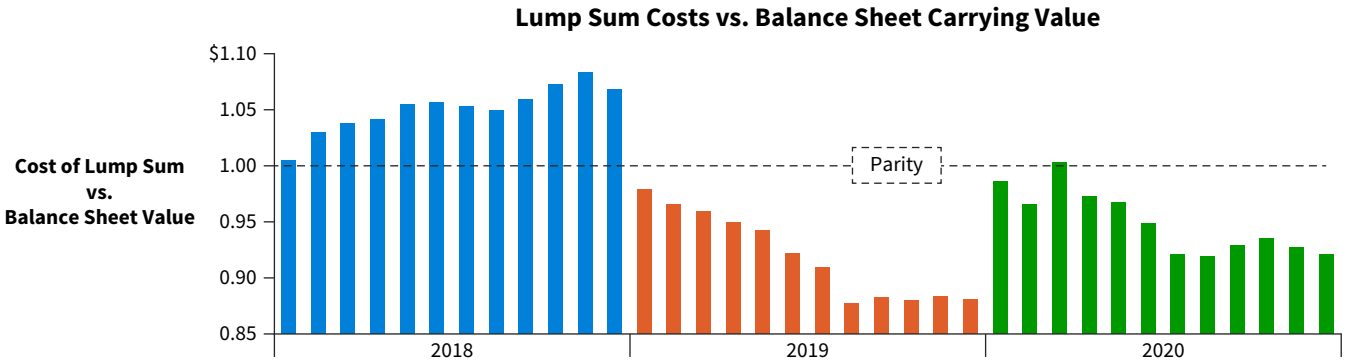
The accounting issue that arises from these terminations is whether a company should recognize a gain when pension plan assets revert back to the company (often called **asset reversion** transactions). The issue is complex. In some cases, a company starts a new defined benefit plan after it eliminates the old one. Thus, some contend that there has been no change in substance but merely a change in form. However, the FASB disagrees. It requires recognition in earnings of a gain or loss when the employer settles a pension obligation either by lump-sum cash payments to participants or by purchasing nonparticipating annuity contracts. [9]

Analytics in Action: Pension De-Risking

What actually goes into the termination of a pension plan? When companies like **FedEx** or **Bristol-Myers Squibb** decide to reduce their pension-related risk, they have a few options. One option is to shift the pension risk to an insurance company through an annuity buyout. In this scenario, the plan sponsor purchases a group annuity contract through an insurance company to cover the pension liability. FedEx purchased a group annuity contract from **Metropolitan Life Insurance Company** to transfer $6 billion of its pension obligation to the insurance company, covering about 41,000 of its plan participants. While this transfer of risk resulted in a one-time settlement of $210 million, FedEx was willing to pay to reduce its pension risk.

Another option is to offer the plan participants a lump-sum payout—this removes obligations to these employees from any future liability, and the participants can invest the funds as they see fit. In 2017, FedEx paid out $1.3 billion to 18,300 participants. How does a company determine the lump-sum value to pay out to its participants? Future pension benefits will be discounted back to a present-value amount offered to each participant. The discount rate used to calculate the lump-sum value will have a significant impact on the present value calculation.

Now consider the analytics of terminating a pension plan. The plan sponsor will likely consider a significant amount of data to understand future pension costs compared to the cost of termination, perhaps employing predictive analytics to understand the percentage of participants accepting a payout versus choosing the continued annuity payment. Participants, faced with the decision of accepting a lump-sum payout or continued annuity, will have to understand the trade-offs of their decision, which is not an easy one. The following chart shows the comparison of lump-sum payouts to pension participants compared to the value of the pension obligation on the balance sheet. As indicated, most recently, plan sponsors are able to pay out lump-sum settlements at a discount.



Indeed, armed with data, as that presented in the chart and the tools to understand the data, participants will be able to best evaluate their options.

Source: Michael Buchenholz, "Corporate Pension Peer Analysis 2021," *jpmorgan.com* (March2021).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Concluding Observations

Hardly a day goes by without the financial press analyzing in depth some issue related to pension plans in the United States. This is not surprising, since pension funds exceed over $40 trillion in assets globally. As you have seen, the accounting issues related to pension plans are complex. The FASB has clarified many of these issues which should help users understand the financial implications of a company's pension plans on its financial position, results of operations, and cash flows.

Put It into Practice LO 19.5

Prepare Worksheet, Journal Entry, and Financial Statements

FACTS Jablonski Corp. sponsors a defined benefit pension plan for its employees. On January 1, 2025, the following balances relate to this plan.

Plan assets (market-related value)	$170,000
Projected benefit obligation	340,000
Pension asset/liability	170,000 Cr.
OCI—Prior service cost	100,000
OCI—Loss	39,000

As a result of the operation of the plan during 2025, the actuary provided the following additional data at December 31, 2025.

Service cost for 2025	$45,000
Actual return on plan assets in 2025	27,000
Amortization of prior service cost	20,000
Contributions in 2025	85,000
Benefits paid retirees in 2025	51,000
Settlement rate	7%
Expected return on plan assets	8%
Average remaining service life of active employees	10 years

INSTRUCTIONS

a. Compute pension expense for Jablonski Corp. for the year 2025 by preparing a pension worksheet that shows the journal entry for pension expense.

b. Indicate the pension amounts reported in the financial statements.

SOLUTION

a.

Jablonski Corp. Pension Worksheet—2025

Items	Annual Pension Expense	Cash	Other Comprehensive Income: Prior Service Cost	Other Comprehensive Income: Gain/Loss	Pension Asset/Liability	Memo Record: Projected Benefit Obligation	Memo Record: Plan Assets
	General Journal Entries					**Memo Record**	
Balance, Jan. 1, 2025					$170,000 Cr.	$340,000 Cr.	$170,000 Dr.
Service cost	$45,000 Dr.					45,000 Cr.	
Interest cost*	23,800 Dr.					23,800 Cr.	
Actual return	27,000 Cr.						27,000 Dr.
Unexpected gain**	13,400 Dr.			$13,400 Cr.			
Amortization of PSC	20,000 Dr.		$20,000 Cr.				
Amortization of loss***	500 Dr.			500 Cr.			
Contributions		$85,000 Cr.					85,000 Dr.
Benefits						51,000 Dr.	51,000 Cr.
Journal entry for 2025	$75,700 Dr.	$85,000 Cr.	20,000 Cr.	13,900 Cr.	43,200 Dr.		
Accumulated OCI, Dec. 31, 2024			100,000 Dr.	39,000 Dr.			
Balance, Dec. 31, 2025			$80,000 Dr.	$25,100 Dr.	$126,800 Cr.	$357,800 Cr.	$231,000 Dr.

*$23,800 = $340,000 × .07

**$13,400 = ($170,000 × .08) − $27,000

*** 1/1 Projected Benefit Obligation

Year	1/1 Projected Benefit Obligation	Value of 1/1 Plan Assets	10% Corridor	Accumulated OCI (G/L), 1/1	Minimum Amortization of Loss for 2025
2025	$340,000	$170,000	$34,000	$39,000	$500****

**** ($39,000 − $34,000) = $5,000; $5,000 ÷ 10 = $500

2025

Pension Expense	75,700	
Pension Asset/Liability	43,200	
Other Comprehensive Income (PSC)		20,000
Other Comprehensive Income (G/L)		13,900
Cash		85,000

b. The pension amounts reported in the 2025 financial statements are as follows.

Income Statement

Operating expenses	
Pension expense (service cost)	$45,000
Other income or expense	
Pension expense (other components)	$30,700

Comprehensive Income Statement

Net income		$ XXXX
Other comprehensive income		
Asset gain	$13,400	
Amortization of loss	500	
Prior service cost amortization	20,000	33,900
Comprehensive income		$ XXXX

Balance Sheet

Liabilities	
Pension liability	$126,800
Stockholders' equity	
Accumulated other comprehensive loss (PSC)	80,000
Accumulated other comprehensive loss (G/L)	25,100

APPENDIX **19A**

Accounting for Postretirement Benefits

LEARNING OBJECTIVE* 6

Identify the differences between pensions and postretirement healthcare benefits.

IBM's adoption of the GAAP requirements on postretirement benefits resulted in a $2.3 billion charge and a historical curiosity—IBM's first-ever quarterly loss. **General Electric** disclosed that its charge for adoption of the same GAAP rules would be $2.7 billion. **AT&T** absorbed a $2.1 billion pretax hit for postretirement benefits upon adoption. What is GAAP in this area, and how could its adoption have so grave an impact on companies' earnings?

Accounting Guidance

The accounting guidance for postretirement benefits is similar to that for pensions. **[10]**

- These rules cover healthcare and other "welfare benefits" provided to retirees, their spouses, dependents, and beneficiaries.
- These other welfare benefits include life insurance offered outside a pension plan; medical, dental, and eye care; legal and tax services; tuition assistance; day care; and housing assistance.[19]

[19]"OPEB" is the acronym frequently used to describe postretirement benefits other than pensions. This term came into being before the scope of guidance was narrowed from "other postemployment benefits" to "other postretirement benefits," thereby excluding postemployment benefits related to severance pay or wage continuation to disabled, terminated, or laid-off employees.

Because healthcare benefits are the largest of the other postretirement benefits, we use this item to illustrate accounting for postretirement benefits.

For many employers (about 95%), these GAAP rules required a change from the predominant practice of accounting for postretirement benefits on a pay-as-you-go (cash) basis to an accrual basis. Similar to pension accounting, the accrual basis necessitates measuring the employer's obligation to provide future benefits and accrual of the cost during the years that the employee provides service.

One of the reasons companies had not prefunded these benefit plans was that payments to prefund healthcare costs, unlike contributions to a pension trust, are not tax-deductible. Another reason was that postretirement healthcare benefits were once perceived to be a low-cost employee benefit that could be changed or eliminated at will and therefore were not a legal liability. Now, the accounting definition of a liability goes beyond the notion of a legally enforceable claim; the definition now encompasses equitable or constructive obligations as well, making it clear that the postretirement benefit promise is a liability.[20]

Differences Between Pension Benefits and Healthcare Benefits

The FASB used the GAAP rules on pensions as a reference for the accounting prescribed for healthcare and other nonpension postretirement benefits.[21] Why didn't the FASB cover these other types of postretirement benefits in the earlier pension accounting statement? Because the apparent similarities between the two benefits mask some significant differences. **Illustration 19A.1** shows these differences.[22]

ILLUSTRATION 19A.1 Differences Between Pensions and Postretirement Healthcare Benefits

Item	Pensions	Healthcare Benefits
Funding	Generally funded.	Generally **not** funded.
Benefit	Well-defined and level dollar amount.	Generally uncapped and great variability.
Beneficiary	Retiree (maybe some benefit to surviving spouse).	Retiree, spouse, and other dependents.
Benefit payable	Monthly.	As needed and used.
Predictability	Variables are reasonably predictable.	Utilization difficult to predict. Level of cost varies geographically and fluctuates over time.

Two of the differences in Illustration 19A.1 highlight why measuring the future payments for healthcare benefit plans is so much more difficult than for pension plans.

1. Many postretirement plans do not set a limit on healthcare benefits. No matter how serious the illness or how long it lasts, the benefits continue to flow. (Even if the employer uses an insurance company plan, the premiums will escalate according to the increased benefits provided.)
2. The levels of healthcare benefit use and healthcare costs are difficult to predict. Increased longevity, unexpected illnesses (e.g., AIDS, SARS, and COVID), along with new medical technologies and cures, cause changes in healthcare utilization.

Additionally, although the fiduciary and reporting standards for employee benefit funds under government regulations generally cover healthcare benefits, the stringent minimum vesting, participation, and funding standards that apply to pensions do not apply to healthcare benefits.

[20] "Elements of Financial Statements," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: 1985), p. 13, footnote 21.

[21] Other postemployment (but before retirement) benefits include, but are not limited to, salary continuation, disability-related benefits, severance benefits, and continuance of healthcare benefits and life insurance for inactive or former (e.g., terminated, disabled, or deceased) employees or their beneficiaries. These benefits are accounted for similar to accounting for compensated absences (see Chapter 12). **[11]**

[22] D. Gerald Searfoss and Naomi Erickson, "The Big Unfunded Liability: Postretirement Health-Care Benefits," *Journal of Accountancy* (November 1988), pp. 28–39.

Nevertheless, as you will learn, many of the basic concepts of pensions, and much of the related accounting terminology and measurement methodology, do apply to other postretirement benefits. Therefore, in the following discussion and illustrations, we point out the similarities and differences in the accounting and reporting for these two types of postretirement benefits.

Accounting Matters — OPEBs—How Big Are They?

For many companies, **other postretirement benefit obligations (OPEBs)** are substantial. Generally, OPEBs are not well funded because companies are not permitted a tax deduction for contributions to the plan assets, as is the case with pensions. That is, the company may not claim a tax deduction until it makes a payment to the participant (pay-as-you-go).

The following are companies with the largest OPEB obligations, indicating their relationship with other financial items.

For Year Ended 12/31/2020	Benefit Obligation (in millions)	% Underfunded	Obligation as a % of Stockholders' Equity
General Motors	$ 6,656	100.00%	13.40%
Ford Motor	6,575	100.00	19.79
AT&T	13,928	72.41	7.77
Verizon Communications	16,168	96.46	23.34
Boeing	4,693	96.59	25.96

Source: Company reports.

So, how big are OPEB obligations? REALLY big.

Postretirement Benefits Accounting Provisions

Healthcare and other postretirement benefits for current and future retirees and their dependents are forms of deferred compensation. They are earned through employee service and are subject to accrual during the years an employee is working.

The period of time over which the postretirement benefit cost accrues is called the **attribution period**. It is the period of service during which the employee earns the benefits under the terms of the plan. The attribution period, shown in **Illustration 19A.2** for a hypothetical employee, generally begins when an employee is hired and ends on the date the employee is eligible to receive the benefits and ceases to earn additional benefits by performing service, the vesting date.[23]

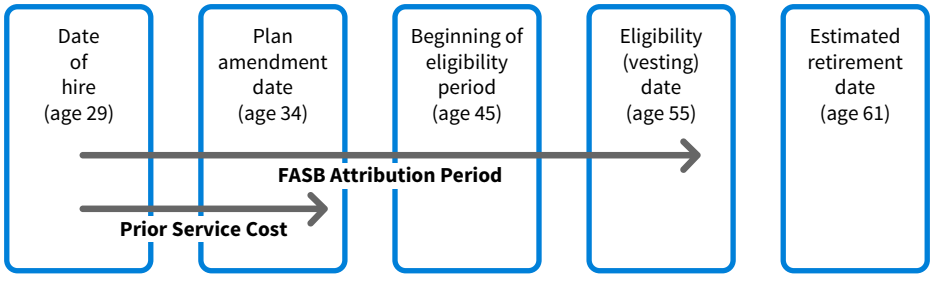

Date of hire (age 29)
Plan amendment date (age 34)
Beginning of eligibility period (age 45)
Eligibility (vesting) date (age 55)
Estimated retirement date (age 61)
FASB Attribution Period
Prior Service Cost

ILLUSTRATION 19A.2 Range of Possible Attribution Periods

[23]This is a benefit-years-of-service approach (the projected unit credit actuarial cost method). The FASB found no compelling reason to switch from the traditional pension accounting approach. It rejected the employee's full service period (i.e., to the estimated retirement date) because it was unable to identify any approach that would appropriately attribute benefits beyond the date when an employee attains full eligibility for those benefits. Employees attain full eligibility by meeting specified age, service, or age and service requirements of the plan.

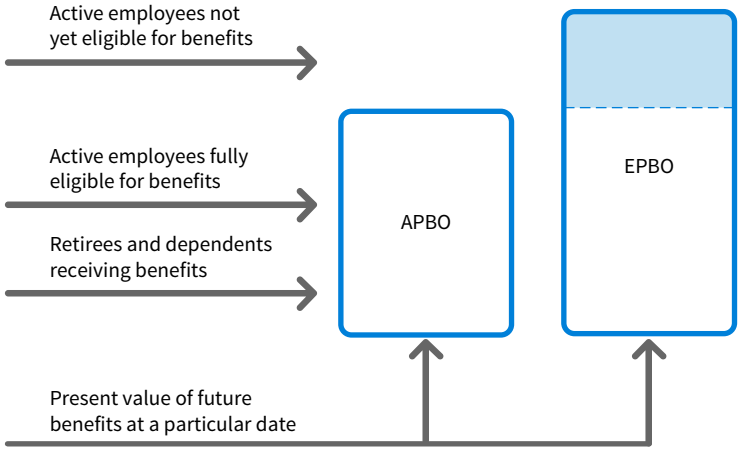
Obligations Under Postretirement Benefits

In defining the obligation for postretirement benefits, the FASB maintained many concepts similar to pension accounting. It also designed some new and modified terms specifically for postretirement benefits. Two of the most important of these specialized terms are as follows.

1. The **expected postretirement benefit obligation (EPBO)** is the actuarial present value as of a particular date of **all benefits a company expects to pay after retirement to employees and their dependents.** Companies do not record the EPBO in the financial statements, but they do use it in measuring periodic expense.
2. The **accumulated postretirement benefit obligation (APBO)** is the actuarial present value of **future benefits attributed to employees' services rendered to a particular date**. The APBO is equal to the EPBO for retirees and active employees fully eligible for benefits. Before the date an employee achieves full eligibility, the APBO is only a portion of the EPBO. Or stated another way, the difference between the APBO and the EPBO is the future service costs of active employees who are not yet fully eligible.

Illustration 19A.3 contrasts the EPBO and the APBO. At the date an employee is fully eligible (the end of the attribution period), the APBO and the EPBO for that employee are equal.

ILLUSTRATION 19A.3 APBO and EPBO Contrasted


Active employees not yet eligible for benefits
Active employees fully eligible for benefits
Retirees and dependents receiving benefits
APBO
EPBO
Present value of future benefits at a particular date

Postretirement Expense

Postretirement expense is the employer's annual expense for postretirement benefits. Also called **net periodic postretirement benefit cost**, this expense consists of many of the familiar components used to compute annual pension expense. The components of net periodic postretirement benefit cost are shown in Illustration 19A.4. **[12]**[24]

[24]See James R. Wilbert and Kenneth E. Dakdduk, "The New FASB 106: How to Account for Postretirement Benefits," Journal of Accountancy (August 1991), pp. 36–41.

ILLUSTRATION 19A.4 Components of Net Periodic Postretirement Benefit Cost

Component	Description
Service cost	The portion of the EPBO attributed to employee service during the period.
Interest cost	The increase in the APBO attributable to the passage of time. Companies compute interest cost by applying the beginning-of-the-year discount rate to the beginning-of-the-year APBO, adjusted for benefit payments to be made during the period. The discount rate is based on the rates of return on high-quality, fixed-income investments that are currently available.[25]
Actual return on plan assets	The change in the fair value of the plan's assets adjusted for contributions and benefit payments made during the period. Because companies charge or credit the postretirement expense for the gain or loss on plan assets (the difference between the actual and the expected return), this component is actually the expected return.
Amortization of prior service cost	The amortization of the cost of retroactive benefits resulting from plan amendments. The typical amortization period, beginning at the date of the plan amendment, is the remaining service periods through the full eligibility date.
Gains and losses	In general, changes in the APBO resulting from changes in assumptions or from experience different from that assumed. For funded plans, this component also includes the difference between actual return and expected return on plan assets.

Illustrative Accounting Entries

LEARNING OBJECTIVE *7

Contrast accounting for pensions to accounting for other postretirement benefits.

Like pension accounting, the accounting for postretirement plans must recognize in the accounts and in the financial statements effects of several significant items. These items are:

1. Expected postretirement benefit obligation (EPBO).
2. Accumulated postretirement benefit obligation (APBO).
3. Postretirement benefit plan assets.
4. Prior service cost.
5. Net gain or loss.

The EPBO is not recognized in the financial statements or disclosed in the notes. Companies recompute it each year, and the actuary uses it in measuring the annual service cost. Because of the numerous assumptions and actuarial complexity involved in measuring annual service cost, we have omitted these computations of the EPBO.

Similar to pensions, companies must recognize in the financial statements items 2 through 5 listed above. In addition, as in pension accounting, companies must know the exact amount of these items in order to compute postretirement expense. Therefore, companies use the worksheet like that for pension accounting to record both the formal general journal entries and the memo entries.

2025 Entries and Worksheet

To illustrate the use of a worksheet in accounting for a postretirement benefits plan, assume that on January 1, 2025, Quest Company adopts a healthcare benefit plan. The following facts apply to the postretirement benefits plan for the year 2025.

[25]The FASB concluded that the discount rate for measuring the present value of the postretirement benefit obligation and the service cost component should be the same as that applied to pension measurements. It chose not to label it the **settlement rate**, in order to clarify that the objective of the discount rate is to measure the time value of money.

- Plan assets at fair value on January 1, 2025, are zero.
- Actual and expected returns on plan assets are zero.
- Accumulated postretirement benefit obligation (APBO), January 1, 2025, is zero.
- Service cost is $54,000.
- No prior service cost exists.
- Interest cost on the APBO is zero (the beginning balance of the APBO is zero).
- Funding contributions during the year are $38,000.
- Benefit payments to employees from plan are $28,000.

Using that data, the worksheet in **Illustration 19A.5** presents the postretirement entries for 2025.

ILLUSTRATION 19A.5 Postretirement Worksheet—2025

	A	B	C	D	E	F
1	**Postretirement Worksheet—2025**					
2		**General Journal Entries**			**Memo Record**	
3	**Items**	**Annual Postretirement Expense**	**Cash**	**Postretirement Asset/Liability**	**APBO**	**Plan Assets**
4	Balance, Jan. 1, 2025					
5	(a) Service cost	$54,000 Dr.			$54,000 Cr.	
6	(b) Contributions		$38,000 Cr.			$38,000 Dr.
7	(c) Benefits				28,000 Dr.	28,000 Cr.
8	Journal entry for 2025	$54,000 Dr.	$38,000 Cr.	$16,000 Cr.*		
9	Balance, Dec. 31, 2025			$16,000 Cr.**	$26,000 Cr.	$10,000 Dr.
10	*$54,000 – $38,000 = $16,000					
11	**$26,000 – $10,000 = $16,000					

- Entry (a) records the service cost component, which increases postretirement expense $54,000 and increases the liability (APBO) $54,000.
- Entry (b) records Quest's funding of assets to the postretirement fund. The funding decreases cash $38,000 and increases plan assets $38,000.
- Entry (c) records the benefit payments made to retirees, which results in equal $28,000 decreases to the plan assets and the liability (APBO).

Quest's December 31 adjusting entry formally records the postretirement expense in 2025, as follows.

December 31, 2025		
Postretirement Expense	54,000	
Cash		38,000
Postretirement Asset/Liability		16,000

The credit to Postretirement Asset/Liability for $16,000 represents the difference between the APBO and the plan assets. The $16,000 credit balance is a liability because the plan is underfunded. The Postretirement Asset/Liability account balance of $16,000 also equals the net of the balances in the memo accounts.

Illustration 19A.6 shows the funded status reported in the balance sheet. (Notice its similarity to the pension schedule.)

Accumulated postretirement benefit obligation (Credit)	$(26,000)
Plan assets at fair value (Debit)	10,000
Postretirement asset/liability (Credit)	$(16,000)

ILLUSTRATION 19A.6
Postretirement Reconciliation Schedule—December 31, 2025

Recognition of Gains and Losses

Gains and losses represent changes in the APBO or the value of plan assets. These changes result either from actual experience different from that expected or from changes in actuarial assumptions. The amortization of these gains and losses follows the approach used for pensions. That is, the gains and losses are recorded in other comprehensive income.

The Corridor Approach Consistent with pension accounting, companies amortize the gains and losses in accumulated other comprehensive income as a component of postretirement expense if, at the beginning of the period, they exceed a "corridor" limit. The corridor is measured as the greater of 10% of the APBO or 10% of the market-related value of plan assets. The intent of the **corridor approach** is to reduce volatility of postretirement expense by providing a reasonable opportunity for gains and losses to offset over time without affecting net periodic expense.

Amortization Methods If the company must amortize gains and losses (beyond the corridor) on postretirement benefit plans, the **minimum amortization amount** is the excess gain or loss—in excess of the corridor—divided by the average remaining service life to expected retirement of all active employees. Companies may use any systematic method of amortization provided that:

- The amount amortized in any period is equal to or greater than the minimum amount.
- The company applies the method consistently.
- The company applies the method similarly for gains and losses.

The company must recompute the amount of gain or loss in accumulated other comprehensive income each year and amortize the gain or loss over the average remaining service life if the net amount exceeds the "corridor."

2026 Entries and Worksheet

Continuing the Quest Company illustration into 2026, the following facts apply to the postretirement benefits plan for the year 2026.

- Actual return on plan assets is $600.
- Expected return on plan assets is $800.
- Discount rate is 8%.
- Increase in APBO due to change in actuarial assumptions is $60,000.
- Service cost is $26,000.
- Funding contributions during the year are $18,000.
- Benefit payments to employees during the year are $5,000.
- Average remaining service to expected retirement: 25 years.

The worksheet in **Illustration 19A.7** presents all of Quest's postretirement benefit entries and information for 2026. The beginning balances on the first line of the worksheet are the ending balances from Quest's 2025 postretirement benefits worksheet in Illustration 19A.5.

ILLUSTRATION 19A.7 Postretirement Benefits Worksheet—2026

	A	B	C	D	E	F	G
1	**Postretirement Benefits Worksheet—2026**						
2		**General Journal Entries**				**Memo Record**	
3	**Items**	**Annual Postretirement Expense**	**Cash**	**Other Comprehensive Income (G/L)**	**Postretirement Asset/Liability**	**APBO**	**Plan Assets**
4	Balance, Jan. 1, 2026				$16,000 Cr.	$ 26,000 Cr.	$10,000 Dr.
5	(d) Service cost	$26,000 Dr.				26,000 Cr.	
6	(e) Interest cost	2,080 Dr.				2,080 Cr.	
7	(f) Actual return	600 Cr.					600 Dr.
8	(g) Unexpected loss	200 Cr.		$ 200 Dr.			
9	(h) Contributions		$18,000 Cr.				18,000 Dr.
10	(i) Benefits					5,000 Dr.	5,000 Cr.
11	(j) Increase in APBO (Loss)			60,000 Dr.		60,000 Cr.	
12	Journal entry for 2026	$27,280 Dr.	$18,000 Cr.	60,200 Dr.	69,480 Cr.		
13	Accumulated OCI, Dec. 31, 2025			0			
14	Balance, Dec. 31, 2026			$60,200 Dr.	$85,480 Cr.	$109,080 Cr.	$23,600 Dr.

- Entries (d), (h), and (i) are similar to the corresponding entries previously explained for 2025.
- Entry (e) accrues the interest expense component, which increases both the liability and the postretirement expense by $2,080 (the beginning APBO multiplied by the discount rate of 8%).
- Entries (f) and (g) are related. The expected return of $800 is higher than the actual return of $600. To smooth postretirement expense, Quest defers the unexpected loss of $200 ($800 − $600) by debiting Other Comprehensive Income (G/L) and crediting Postretirement Expense. As a result of this adjustment, the expected return on the plan assets is the amount actually used to compute postretirement expense.
- Entry (j) records the change in the APBO resulting from a change in actuarial assumptions. This $60,000 increase in the employer's accumulated liability is an unexpected loss. Quest debits this loss to Other Comprehensive Income (G/L).

On December 31, Quest formally records net periodic expense for 2026 as follows.

December 31, 2026		
Postretirement Expense	27,280	
Other Comprehensive Income (G/L)	60,200	
Cash		18,000
Postretirement Asset/Liability		69,480

The balance of the Postretirement Asset/Liability account at December 31, 2026, is $85,480. This balance is equal to the net of the balances in the memo accounts as shown in the reconciliation schedule in Illustration 19A.8.

ILLUSTRATION 19A.8 Postretirement Benefits Reconciliation Schedule—December 31, 2026

Accumulated postretirement benefit obligation (Credit)	$(109,080)
Plan assets at fair value (Debit)	23,600
Postretirement asset/liability (Credit)	$ (85,480)

Amortization of Net Gain or Loss in 2027

Quest has a beginning balance in Accumulated OCI related to losses of $60,200. Therefore, Quest must apply the corridor test for amortization of the balance for 2027. Illustration 19A.9 shows the computation of the amortization charge for the loss.

2027 Corridor Test

Accumulated OCI at beginning of year	$60,200
10% of greater of APBO or market-related value of plan assets ($109,080 × .10)	(10,908)
Amortizable amount	$49.292
Average remaining service to expected retirement	25 years
2027 amortization of loss ($49,292 ÷ 25)	$ 1,972

ILLUSTRATION 19A.9
Computation of Amortization Charge (Corridor Test)—2027

Disclosures in Notes to the Financial Statements

The disclosures required for other postretirement benefit plans are similar to and just as detailed and extensive as those required for pensions. The note disclosure for **Tootsie Roll, Inc.** in **Illustration 19A.10** provides a good example of the extensive disclosure required for other postretirement benefit plans.

Tootsie Roll Industries, Inc.
Notes to Financial Statements

Note 7 Employee Benefit Plans (partial)

Postretirement health care benefit plans:

The Company maintains a post-retirement health benefits plan for a group of "grandfathered" corporate employees. The plan as amended in 2013, generally limited future annual cost increases in health benefits to 3%, restricted this benefit to current employees and retirees with long-term service with the Company, and eliminated all post-retirement benefits for future employees effective April 1, 2014. Post-retirement benefits liabilities (as amended) were $13,487 and $13,743 at December 31, 2020 and 2019, respectively.

Amounts recognized in accumulated other comprehensive loss (pre-tax) at December 31, 2020 are as follows:

Prior service credit	$(1,840)
Net actuarial gain	(1,196)
Net amount recognized in accumulated other comprehensive loss	$(3,036)

Amounts recognized in other comprehensive income

The changes in the accumulated postretirement benefit obligation at December 31, 2020 and 2019 consist of the following:

	December 31	
	2020	2019
Benefit obligation, beginning of year	$13,743	$12,451
Service cost	288	270
Interest cost	403	499
Actuarial (gain)/loss	(510)	922
Benefits paid	(437)	(399)
Benefit obligation, end of year	$13,487	$13,743

Reconciliation of OPEB liability

Net periodic postretirement benefit cost included the following components:

	2020	2019	2018
Service cost—benefits attributed to service during the period	$ 288	$ 270	$ 337
Interest cost on the accumulated postretirement benefit obligation	403	499	455
Net amortization	(1,349)	(1,522)	(1,324)
Net periodic postretirement benefit cost (income)	$ (658)	$ (753)	$ (532)

Components of OPEB expense

The Company estimates future benefit payments will be $544, $564, $590, $614 and $634 in 2021 through 2025, respectively, and a total of $3,417 in 2026 through 2030.

Expected benefit payments

ILLUSTRATION 19A.10
Postretirement Benefit Disclosure

As indicated in Illustration 19A.10, Tootsie Roll shows the impact of the postretirement benefit plan on income, the balance sheet, and the cash flow statement, and it provides information on important assumptions used in the measurement of the postretirement benefit obligation. Also note that given no tax incentives for funding, Tootsie Roll (like many companies) does not have any assets set aside for its other postretirement benefit obligations.

While Tootsie Roll has only an other postretirement benefit plan, many companies sponsor both defined benefit pension and other postretirement plans. Given the similarities in accounting for these plans, companies can combine pension and other postretirement benefit disclosures.[26]

Actuarial Assumptions and Conceptual Issues

Measurement of the EPBO, the APBO, and the net periodic postretirement benefit cost is involved and complex. Due to the uncertainties in forecasting healthcare costs, rates of use, changes in government health programs, and the differences employed in nonmedical assumptions (e.g., discount rate, employee turnover, rate of pre-65 retirement, spouse-age difference), estimates of postretirement benefit costs may have a large margin of error. Is the information relevant, reliable, or verifiable? The FASB concluded that "the obligation to provide postretirement benefits meets the definition of a liability, is representationally faithful, is relevant to financial statement users, and can be measured with sufficient reliability at a justifiable cost." **[13]** Failure to accrue an obligation and an expense prior to payment of benefits would result in an unfaithful representation of what financial statements should represent.

The FASB took a momentous step by requiring recognition of a postretirement liability. Many opposed the requirement, warning that the GAAP rules would devastate earnings. Others argued that putting these numbers on the balance sheet was inappropriate. Others noted that the requirement would force companies to curtail postretirement benefits to employees.

The authors believe that the FASB deserves special praise. Because the Board addressed this issue, companies now recognize the magnitude of these costs. This recognition has led to efforts to control escalating healthcare costs. As John Ruffle, a former president of the Financial Accounting Foundation noted, "The Board has done American industry a gigantic favor. Over the long term, industry will look back and say thanks."

Review and Practice

Key Terms Review

accumulated benefit obligation 19-6
*accumulated postretirement benefit obligation (APBO) 19-42
actual return on plan assets 19-11
actuarial present value 19-7(*n*)
actuaries 19-6
asset gains and losses 19-21
*attribution period 19-41
cash-balance plans 19-36(*n*)
components of pension expense 19-9
contributory pension plan 19-3
corridor approach 19-22, 19-45
defined benefit plan 19-4
defined contribution plan 19-3
ERISA 19-34
*expected postretirement benefit obligation (EPBO) 19-42
expected rate of return 19-21
expected return on plan assets 19-21
fair value of plan assets 19-11
funded pension plan 19-3
funded status (overfunded or underfunded) 19-7
interest on the liability (interest expense) 19-10
liability gains and losses 19-22
market-related asset value 19-21
noncontributory pension plan 19-3
Other Comprehensive Income (G/L) 19-21
Other Comprehensive Income (PSC) 19-19
pension asset/liability 19-13
pension plan 19-3
pension worksheet 19-13
prior service cost (PSC) 19-16
projected benefit obligation 19-7
qualified pension plan 19-3
reconciliation 19-19
retroactive benefits 19-16
service cost 19-10
settlement rate 19-10
unexpected gain or loss 19-21
vested benefit obligation 19-6
years-of-service method 19-16

[26]Companies also report assets, liabilities, net income, and comprehensive income elements related to other postretirement plans similar to pensions. Many companies present pension and OPEB information in a combined note disclosure.

Learning Objectives Review

1 Discuss the fundamentals of pension plan accounting.

The company or employer is the organization sponsoring the pension plan. It incurs the cost and makes contributions to the pension fund. The fund or plan is the entity that receives the contributions from the employer, administers the pension assets, and makes the benefit payments to the pension recipients (retired employees). The fund should be a separate legal and accounting entity; it maintains a set of books and prepares financial statements.

The two most common types of pension arrangements are as follows. **(1) Defined contribution plans:** The employer agrees to contribute to a pension trust a certain sum each period based on a formula. This formula may consider such factors as age, length of employee service, employer's profits, and compensation level. Only the employer's contribution is defined; no promise is made regarding the ultimate benefits paid out to the employees. **(2) Defined benefit plans:** These plans define the benefits that the employee will receive at the time of retirement. The formula typically provides for the benefits to be a function of the employee's years of service and the compensation level when he or she nears retirement.

Alternative measures for valuing the pension obligation may be used. One measure bases the pension obligation only on the benefits vested to the employees. Vested benefits are those that the employee is entitled to receive even if he or she renders no additional services under the plan. Companies compute the **vested benefit pension obligation** using current salary levels; this obligation includes only vested benefits. Another measure of the obligation, called the **accumulated benefit obligation,** computes the deferred compensation amount based on all years of service performed by employees under the plan—both vested and nonvested—using current salary levels. A third measure, called the **projected benefit obligation,** bases the computation of the deferred compensation amount on both vested and nonvested service using future salaries.

Pension expense is a function of the following components: (1) service cost, (2) interest on the liability, (3) return on plan assets, (4) amortization of prior service cost, and (5) gain or loss.

2 Use a worksheet for employer's pension plan entries.

Companies may use a worksheet unique to pension accounting. This worksheet records both the formal entries and the memo entries to keep track of all the employer's relevant pension plan items and components.

3 Describe the accounting and amortization of prior service costs.

An actuary computes the amount of the prior service cost, and the company then records it as an adjustment to the projected benefit obligation and other comprehensive income. It then amortizes it, generally using a "years-of-service" amortization method, similar to a units-of-production computation. First, the company computes total estimated number of service-years to be worked by all of the participating employees. Second, it divides the accumulated prior service cost by the total number of service-years, to obtain a cost per service-year (the unit cost). Third, the company multiplies the number of service-years consumed each year times the cost per service-year, to obtain the annual amortization charge.

4 Explain the accounting and amortization for unexpected gains and losses.

In estimating the projected benefit obligation (the liability), actuaries make assumptions about such items as mortality rate, retirement rate, turnover rate, disability rate, and salary amounts. Any change in these actuarial assumptions affects the amount of the projected benefit obligation. These unexpected gains or losses from changes in the projected benefit obligation are liability gains and losses. Liability gains result from unexpected decreases in the liability balance; liability losses result from unexpected increases. Companies also incur asset gains or losses. Both types of actuarial gains and losses are recorded in other comprehensive income and adjust either the projected benefit obligation or the plan assets.

The FASB set a limit for the size of an accumulated net gain or loss balance. That arbitrarily selected limit (called a **corridor**) is 10% of the larger of the beginning balances of the projected benefit obligation or the market-related value of the plan assets. Beyond that limit, an accumulated net gain or loss balance is considered too large and must be amortized. If the balance of the accumulated net gain or loss account stays within the upper and lower limits of the corridor, no amortization is required.

5 Describe the requirements for reporting pension plans in financial statements.

Currently, companies must disclose the following pension plan information in their financial statements. (1) The components of pension expense for the period. (2) A schedule showing changes in the benefit obligation and plan assets during the year. (3) The amount of prior service cost and net gains and losses in accumulated OCI, including the estimated prior service cost and gains and losses that will affect net income in the next year. (4) The weighted-average assumed discount rate, the rate of compensation increase used to measure the projected benefit obligation, and the weighted-average expected long-term rate of return on plan assets. (5) A table showing the allocation of pension plan assets by category and the percentage of the fair value to total plan assets. (6) The expected benefit payments for current plan participants for each of the next five fiscal years and for the following five years in aggregate, along with an estimate of expected contributions to the plan during the next year.

*6 Identify the differences between pensions and postretirement healthcare benefits.

Pension plans are generally funded, but healthcare benefit plans are not. Pension benefits are generally well-defined and level in amount; healthcare benefits are generally uncapped and variable. Pension benefits are payable monthly; healthcare benefits are paid as needed and used. Pension plan variables are reasonably predictable, whereas healthcare plan variables are difficult to predict.

***7 Contrast accounting for pensions to accounting for other postretirement benefits.**

Many of the basic concepts, accounting terminology, and measurement methodology that apply to pensions also apply to other postretirement benefit accounting. Because other postretirement benefit plans are unfunded, large obligations can occur. Two significant concepts peculiar to accounting for other postretirement benefits are (1) expected postretirement benefit obligation (EPBO) and (2) accumulated postretirement benefit obligation (APBO).

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. What is a private pension plan? How does a contributory pension plan differ from a noncontributory plan?

2. Differentiate between a defined contribution pension plan and a defined benefit pension plan. Explain how the employer's obligation differs between the two types of plans.

3. Differentiate between "accounting for the employer" and "accounting for the pension fund."

4. The meaning of the term "fund" depends on the context in which it is used. Explain its meaning when used as a noun. Explain its meaning when it is used as a verb.

5. What is the role of an actuary relative to pension plans? What are actuarial assumptions?

6. What factors must be considered by the actuary in measuring the amount of pension benefits under a defined benefit plan?

7. Name three approaches to measuring benefit obligations from a pension plan and explain how they differ.

8. Explain how cash-basis accounting for pension plans differs from accrual-basis accounting for pension plans. Why is cash-basis accounting generally considered unacceptable for pension plan accounting?

9. Identify the five components that comprise pension expense. Briefly explain the nature of each component.

10. What is service cost, and what is the basis of its measurement?

11. In computing the interest component of pension expense, what interest rates may be used?

12. Explain the difference between service cost and prior service cost.

13. What is meant by "prior service cost"? When is prior service cost recognized as pension expense?

14. What are "liability gains and losses," and how are they accounted for?

15. If pension expense recognized in a period exceeds the current amount funded by the employer, what kind of account arises, and how should it be reported in the financial statements? If the reverse occurs—that is, current funding by the employer exceeds the amount recognized as pension expense—what kind of account arises, and how should it be reported?

16. Given the following items and amounts, compute the actual return on plan assets: fair value of plan assets at the beginning of the period $9,500,000, benefits paid during the period $1,400,000, contributions made during the period $1,000,000, and fair value of the plan assets at the end of the period $10,150,000.

17. How does an "asset gain or loss" develop in pension accounting? How does a "liability gain or loss" develop in pension accounting?

18. What is the meaning of "corridor amortization"?

19. At the end of the current period, Agler Inc. had a projected benefit obligation of $400,000 and pension plan assets (at fair value) of $350,000. What are the accounts and amounts that will be reported on the company's balance sheet as pension assets or pension liabilities?

20. At the end of the current year, Pociek Co. has prior service cost of $9,150,000. Where should the prior service cost be reported on the balance sheet?

21. Describe the accounting for actuarial gains and losses.

22. Boey Company reported net income of $25,000 in 2026. It had the following amounts related to its pension plan in 2026: actuarial liability gain $10,000, unexpected asset loss $14,000, accumulated other comprehensive income (G/L) (beginning balance), zero. Determine for 2026 (a) Boey's other comprehensive income, and (b) comprehensive income.

23. Describe the reporting of pension plans for a company with multiple plans, some of which are underfunded and some of which are overfunded.

24. Determine the meaning of the following terms.

    a. Contributory plan.

    b. Vested benefits.

    c. Retroactive benefits.

    d. Years-of-service method.

25. A headline in the *Wall Street Journal* stated, "Firms Increasingly Tap Their Pension Funds to Use Excess Assets." What is the accounting issue related to the use of these "excess assets" through plan terminations?

*26. What are postretirement benefits other than pensions?

*27. Why didn't the FASB cover both types of postretirement benefits—pensions and healthcare—in the earlier pension accounting rules?

*28. What are the major differences between postretirement healthcare benefits and pension benefits?

*29. What is the difference between the APBO and the EPBO? What are the components of postretirement expense?

Brief Exercises

BE19.1 (LO 1) **AMR Corporation** (parent company of **American Airlines**) reported the following (in millions).

Service cost	$366
Interest on P.B.O.	737
Return on plan assets	593
Amortization of prior service cost	13
Amortization of net loss	154

Compute AMR's pension expense.

BE19.2 (LO 1) For Warren Corporation, year-end plan assets were $2,000,000. At the beginning of the year, plan assets were $1,780,000. During the year, contributions to the pension fund were $120,000, and benefits paid were $200,000. Compute Warren's actual return on plan assets.

BE19.3 (LO 2) At January 1, 2025, Hennein Company had plan assets of $280,000 and a projected benefit obligation of the same amount. During 2025, service cost was $27,500, the settlement rate was 10%, actual and expected return on plan assets were $25,000, contributions were $20,000, and benefits paid were $17,500. Prepare a pension worksheet for Hennein for 2025.

BE19.4 (LO 2) **Campbell Soup Company** reported pension expense of $73 million and contributed $71 million to the pension fund. Prepare Campbell's journal entry to record pension expense and funding, assuming campbell has no OCI amounts.

BE19.5 (LO 3) Mancuso Corporation amended its pension plan on January 1, 2025, and granted $160,000 of prior service costs to its employees. The employees are expected to provide 2,000 service years in the future, with 350 service years in 2025. Compute prior service cost amortization for 2025.

BE19.6 (LO 3) At December 31, 2025, Besler Corporation had a projected benefit obligation of $560,000, plan assets of $322,000, and prior service cost of $127,000 in accumulated other comprehensive income. Determine the pension asset/liability at December 31, 2025.

BE19.7 (LO 4) Shin Corporation had a projected benefit obligation of $3,100,000 and plan assets of $3,300,000 at January 1, 2025. Shin also had a net actuarial loss of $465,000 in accumulated OCI at January 1, 2025. The average remaining service period of Shin's employees is 7.5 years. Compute Shin's minimum amortization of the actuarial loss.

BE19.8 (LO 5) Hawkins Corporation has the following balances at December 31, 2025.

Projected benefit obligation	$2,600,000
Plan assets at fair value	2,000,000
Accumulated OCI (PSC)	1,100,000

How should these balances be reported on Hawkins' balance sheet at December 31, 2025?

BE19.9 (LO 5) Norton Co. had the following amounts related to its pension plan in 2025.

Actuarial liability loss for 2025	$28,000
Unexpected asset gain for 2025	18,000
Accumulated other comprehensive income (G/L) (beginning balance)	7,000 Cr.

Determine for 2025 (a) Norton's other comprehensive income (loss) and (b) comprehensive income. Net income for 2025 is $26,000; no amortization of gain or loss is necessary in 2025.

*BE19.10 (LO 6, 7) Manno Corporation has the following information available concerning its postretirement benefit plan for 2025.

Service cost	$40,000
Interest cost	47,400
Actual and expected return on plan assets	26,900

Compute Manno's 2025 postretirement expense.

*BE19.11 (LO 6, 7) For 2025, Sampsell Inc. computed its annual postretirement expense as $240,900. Sampsell's contribution to the plan during 2025 was $180,000. Prepare Sampsell's 2025 entry to record postretirement expense, assuming Sampsell has no OCI amounts.

Exercises

E19.1 (LO 1, 2) Excel **(Pension Expense, Journal Entries)** The following information is available for the pension plan of Radcliffe Company for the year 2025.

Actual and expected return on plan assets	$ 15,000
Benefits paid to retirees	40,000
Contributions (funding)	90,000
Interest/discount rate	10%
Prior service cost amortization	8,000
Projected benefit obligation, January 1, 2025	500,000
Service cost	60,000

Instructions

a. Compute pension expense for the year 2025.

b. Prepare the journal entry to record pension expense and the employer's contribution to the pension plan in 2025.

E19.2 (LO 1, 2, 3) **(Computation of Pension Expense)** Veldre Company provides the following information about its defined benefit pension plan for the year 2025.

Service cost	$ 90,000
Contribution to the plan	105,000
Prior service cost amortization	10,000
Actual and expected return on plan assets	64,000
Benefits paid	40,000
Plan assets at January 1, 2025	640,000
Projected benefit obligation at January 1, 2025	700,000
Accumulated OCI (PSC) at January 1, 2025	150,000
Interest/discount (settlement) rate	10%

Instructions

Compute the pension expense for the year 2025.

E19.3 (LO 1, 2, 3) **(Preparation of Pension Worksheet)** Using the information in E19.2, prepare a pension worksheet inserting January 1, 2025, balances, showing December 31, 2025, balances, and the journal entry recording pension expense.

E19.4 (LO 1, 2) **(Basic Pension Worksheet)** The following facts apply to the pension plan of Boudreau Inc. for the year 2025.

Plan assets, January 1, 2025	$490,000
Projected benefit obligation, January 1, 2025	490,000
Settlement rate	8%
Service cost	40,000
Contributions (funding)	25,000
Actual and expected return on plan assets	49,700
Benefits paid to retirees	33,400

Instructions

Using this data, compute pension expense for the year 2025. As part of your solution, prepare a pension worksheet that shows the journal entry for pension expense for 2025 and the year-end balances in the related pension accounts.

E19.5 (LO 3) (Application of Years-of-Service Method) Andrews Company has five employees participating in its defined benefit pension plan. Expected years of future service for these employees at the beginning of 2025 are as follows.

Employee	Future Years of Service
Jim	3
Paul	4
Nancy	5
Dave	6
Kathy	6

On January 1, 2025, the company amended its pension plan, increasing its projected benefit obligation by $72,000.

Instructions

Compute the amount of prior service cost amortization for the years 2025 through 2030 using the years-of-service method, setting up appropriate schedules.

E19.6 (LO 1) (Computation of Actual Return) Gingrich Importers provides the following pension plan information.

Fair value of pension plan assets, January 1, 2025	$2,400,000
Fair value of pension plan assets, December 31, 2025	2,725,000
Contributions to the plan in 2025	280,000
Benefits paid retirees in 2025	350,000

Instructions

From the data above, compute the actual return on the plan assets for 2025.

E19.7 (LO 1, 2, 3) Excel (Basic Pension Worksheet) The following defined pension data of Rydell Corp. apply to the year 2025.

Projected benefit obligation, 1/1/25 (before amendment)	$560,000
Plan assets, 1/1/25	546,200
Pension liability, 1/1/25	13,800
On January 1, 2025, Rydell Corp., through plan amendment, grants prior service benefits having this present value	120,000
Settlement rate	9%
Service cost	58,000
Contributions (funding)	65,000
Actual (expected) return on plan assets	52,280
Benefits paid to retirees	40,000
Prior service cost amortization for 2025	17,000

Instructions

For 2025, prepare a pension worksheet for Rydell that shows the journal entry for pension expense and the year-end balances in the related pension accounts.

E19.8 (LO 4) (Application of the Corridor Approach) Kenseth Corp. has the following beginning-of-the-year present values for its projected benefit obligation and market-related values for its pension plan assets.

	Projected Benefit Obligation	Plan Assets Value
2024	$2,000,000	$1,900,000
2025	2,400,000	2,500,000
2026	2,950,000	2,600,000
2027	3,600,000	3,000,000

The average remaining service life per employee in 2024 and 2025 is 10 years; in 2026 and 2027, it is 12 years. The net gain or loss that occurred during each year is as follows: 2024, $280,000 loss; 2025, $90,000 loss; 2026, $11,000 loss; and 2027, $25,000 gain. (In working the solution, the gains and losses must be aggregated to arrive at year-end balances.)

Instructions

Using the corridor approach, compute the amount of net gain or loss amortized and charged to pension expense in each of the four years, setting up an appropriate schedule.

E19.9 (LO 5) (Disclosures: Pension Expense and Other Comprehensive Income) Taveras Enterprises provides the following information relative to its defined benefit pension plan.

Balances or Values at December 31, 2025	
Projected benefit obligation	$2,737,000
Accumulated benefit obligation	1,980,000
Fair value of plan assets	2,278,329
Accumulated OCI (PSC)	210,000
Accumulated OCI—Net loss (1/1/25 balance, –0–)	45,680
Pension liability	458,671
Other pension plan data for 2025:	
Service cost	94,000
Prior service cost amortization	42,000
Actual return on plan assets	130,000
Expected return on plan assets	175,680
Interest on January 1, 2025, projected benefit obligation	253,000
Contributions to plan	93,329
Benefits paid	140,000

Instructions

a. Prepare the note disclosing the components of pension expense for the year 2025.

b. Determine the amounts of other comprehensive income and comprehensive income for 2025. Net income for 2025 is $35,000.

c. Compute the amount of accumulated other comprehensive income reported at December 31, 2025.

E19.10 (LO 1, 2, 3, 4) (Pension Worksheet) Webb Corp. sponsors a defined benefit pension plan for its employees. On January 1, 2025, the following balances relate to this plan.

Plan assets	$480,000
Projected benefit obligation	600,000
Pension asset/liability	120,000
Accumulated OCI (PSC)	100,000 Dr.

As a result of the operation of the plan during 2025, the following additional data are provided by the actuary.

Service cost	$90,000
Settlement rate, 9%	
Actual return on plan assets	55,000
Amortization of prior service cost	19,000
Expected return on plan assets	52,000
Unexpected loss from change in projected benefit obligation, due to change in actuarial predictions	76,000
Contributions	99,000
Benefits paid retirees	85,000

Instructions

a. Using the data above, compute pension expense for Webb. for the year 2025 by preparing a pension worksheet.

b. Prepare the journal entry for pension expense for 2025.

E19.11 (LO 1, 2, 3, 4, 5) (Pension Expense, Journal Entries, Statement Presentation) Henning Company sponsors a defined benefit pension plan for its employees. The following data relate to the operation of the plan for the year 2025 in which no benefits were paid.

1. The actuarial present value of future benefits earned by employees for services rendered in 2025 amounted to $56,000.
2. The company's funding policy requires a contribution to the pension trustee amounting to $145,000 for 2025.

3. As of January 1, 2025, the company had a projected benefit obligation of $900,000, an accumulated benefit obligation of $800,000, and a debit balance of $400,000 in accumulated OCI (PSC). The fair value of pension plan assets amounted to $600,000 at the beginning of the year. The actual and expected return on plan assets was $54,000. The settlement rate was 9%. No gains or losses occurred in 2025 and no benefits were paid.
4. Amortization of prior service cost was $50,000 in 2025. Amortization of net gain or loss was not required in 2025.

Instructions

a. Determine the amounts of the components of pension expense that should be recognized by the company in 2025.

b. Prepare the journal entry or entries to record pension expense and the employer's contribution to the pension trustee in 2025.

c. Indicate the amounts that would be reported on the income statement and the balance sheet for the year 2025.

E19.12 (LO 1, 2, 3, 4, 5) (Pension Expense, Journal Entries, Statement Presentation) Ferreri Company received the following selected information from its pension plan trustee concerning the operation of the company's defined benefit pension plan for the year ended December 31, 2025.

	January 1, 2025	December 31, 2025
Projected benefit obligation	$1,500,000	$1,527,000
Market-related and fair value of plan assets	800,000	1,130,000
Accumulated benefit obligation	1,600,000	1,720,000
Accumulated OCI (G/L)—Net gain	–0–	(200,000)

The service cost component of pension expense for employee services rendered in the current year amounted to $77,000 and the amortization of prior service cost was $120,000. The company's actual funding (contributions) of the plan in 2025 amounted to $250,000. The expected return on plan assets and the actual rate were both 10%; the interest/discount (settlement) rate was 10%. Accumulated other comprehensive income (PSC) had a balance of $1,200,000 on January 1, 2025. Assume no benefits paid in 2025.

Instructions

a. Determine the amounts of the components of pension expense that should be recognized by the company in 2025.

b. Prepare the journal entry to record pension expense and the employer's contribution to the pension plan in 2025.

c. Indicate the pension-related amounts that would be reported on the income statement and the balance sheet for Ferreri Company for the year 2025.

E19.13 (LO 1, 2, 4) (Computation of Actual Return, Gains and Losses, Corridor Test, and Pension Expense) Erickson Company sponsors a defined benefit pension plan. The corporation's actuary provides the following information about the plan.

	January 1, 2025	December 31, 2025
Vested benefit obligation	$1,500	$1,900
Accumulated benefit obligation	1,900	2,730
Projected benefit obligation	2,500	3,300
Plan assets (fair value)	1,700	2,620
Settlement rate and expected rate of return		10%
Pension asset/liability	800	?

Service cost for the year 2025	$ 400
Contributions (funding in 2025)	700
Benefits paid in 2025	200

Instructions

a. Compute the actual return on the plan assets in 2025.

b. Compute the amount of the other comprehensive income (G/L) as of December 31, 2025. (Assume the January 1, 2025, balance was zero.)

c. Compute the amount of net gain or loss amortization for 2025 (corridor approach).

d. Compute pension expense for 2025.

E19.14 (LO 1, 2, 4) (Worksheet for E19.13) Using the information in E19.13 about Erickson Company's defined benefit pension plan, prepare a 2025 pension worksheet with supplementary schedules of computations. Prepare the journal entries at December 31, 2025, to record pension expense and related pension transactions. Also, indicate the pension amounts reported in the balance sheet.

E19.15 (LO 1, 2, 5) (Pension Expense, Journal Entries) Latoya Company provides the following selected information related to its defined benefit pension plan for 2025.

Pension asset/liability (January 1)	$ 25,000 Cr.
Accumulated benefit obligation (December 31)	400,000
Actual and expected return on plan assets	10,000
Contributions (funding) in 2025	150,000
Fair value of plan assets (December 31)	800,000
Projected benefit obligation (January 1)	700,000
Service cost	80,000
Settlement rate	10%

Instructions

a. Compute pension expense and prepare the journal entry to record pension expense and the employer's contribution to the pension plan in 2025. Preparation of a pension worksheet is not required. Benefits paid in 2025 were $35,000.

b. Indicate the pension-related amounts that would be reported in the company's income statement and balance sheet for 2025.

E19.16 (LO 4) (Amortization of Accumulated OCI (G/L), Corridor Approach, Pension Expense Computation) The actuary for the pension plan of Gustafson Inc. calculated the following net gains and losses.

Incurred During the Year	(Gain) or Loss
2025	$300,000
2026	480,000
2027	(210,000)
2028	(290,000)

Other information about the company's pension obligation and plan assets is as follows.

As of January 1,	Projected Benefit Obligation	Plan Assets (market-related asset value)
2025	$4,000,000	$2,400,000
2026	4,520,000	2,200,000
2027	5,000,000	2,600,000
2028	4,240,000	3,040,000

Gustafson Inc. has a stable labor force of 400 employees who are expected to receive benefits under the plan. The total service-years for all participating employees is 5,600. The beginning balance of accumulated OCI (G/L) is zero on January 1, 2025. The market-related value and the fair value of plan assets are the same for the 4-year period. Use the average remaining service life per employee as the basis for amortization.

Instructions

(Round to the nearest dollar.)

Prepare a schedule which reflects the minimum amount of accumulated OCI (G/L) amortized as a component of net periodic pension expense for each of the years 2025, 2026, 2027, and 2028. Apply the "corridor" approach in determining the amount to be amortized each year.

E19.17 (LO 1, 4, 5) (Amortization of Accumulated OCI Balances) Keeton Company sponsors a defined benefit pension plan for its 600 employees. The company's actuary provided the following information about the plan.

	January 1,	December 31,	
	2025	2025	2026
Projected benefit obligation	$2,800,000	$3,650,000	$4,195,000
Accumulated benefit obligation	1,900,000	2,430,000	2,900,000
Plan assets (fair value and market-related asset value)	1,700,000	2,900,000	3,790,000
Accumulated net (gain) or loss (for purposes of the corridor calculation)	–0–	198,000	(24,000)
Discount rate (current settlement rate)		9%	8%
Actual and expected asset return rate		10%	10%
Contributions		1,030,000	600,000

The average remaining service life per employee is 10.5 years. The service cost component of net periodic pension expense for employee services rendered amounted to $400,000 in 2025 and $475,000 in 2026. The accumulated OCI (PSC) on January 1, 2025, was $1,260,000. No benefits have been paid.

Instructions

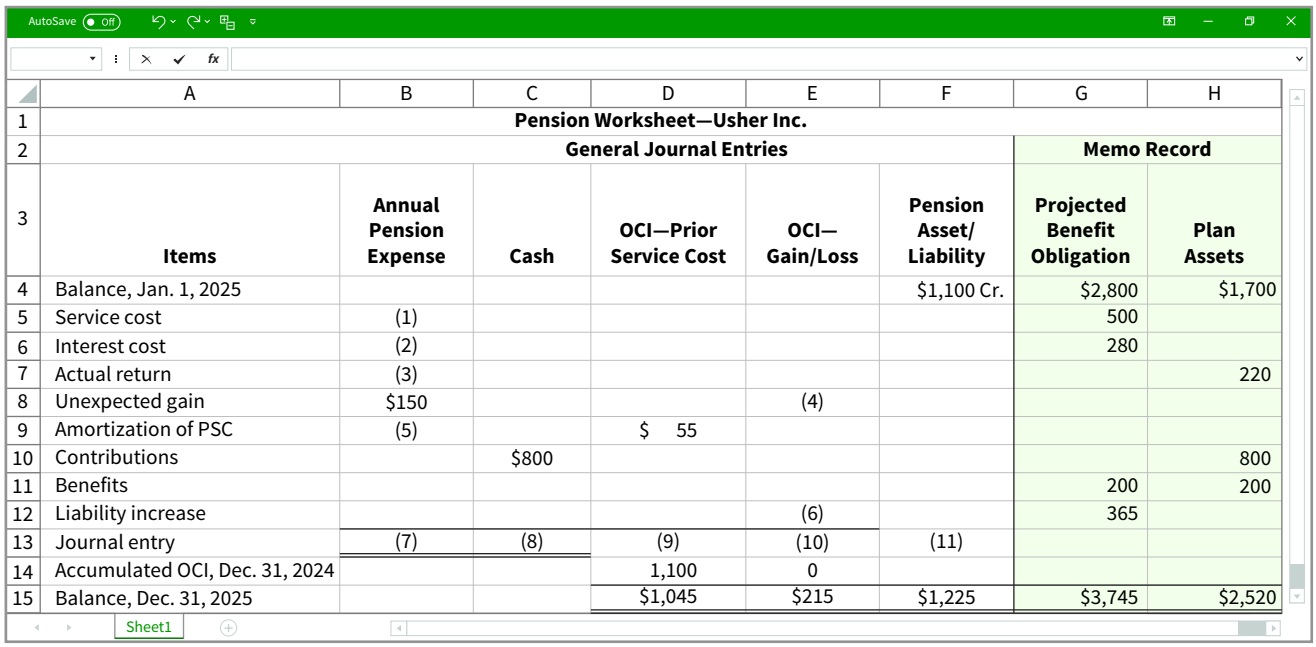
(Round to the nearest dollar.)

a. Compute the amount of accumulated OCI (PSC) to be amortized as a component of net periodic pension expense for each of the years 2025 and 2026.

b. Prepare a schedule which reflects the amount of accumulated OCI (G/L) to be amortized as a component of pension expense for 2025 and 2026.

c. Determine the total amount of pension expense to be recognized by Keeton Company in 2025 and 2026.

E19.18 (LO 1, 2, 3, 4) (Pension Worksheet—Missing Amounts) The accounting staff of Usher Inc. has prepared the following pension worksheet. Unfortunately, several entries in the worksheet are not decipherable. The company has asked your assistance in completing the worksheet and completing the accounting tasks related to the pension plan for 2025.



	A	B	C	D	E	F	G	H
1	**Pension Worksheet—Usher Inc.**							
2		**General Journal Entries**					**Memo Record**	
3	**Items**	**Annual Pension Expense**	**Cash**	**OCI—Prior Service Cost**	**OCI—Gain/Loss**	**Pension Asset/ Liability**	**Projected Benefit Obligation**	**Plan Assets**
4	Balance, Jan. 1, 2025					$1,100 Cr.	$2,800	$1,700
5	Service cost	(1)					500	
6	Interest cost	(2)					280	
7	Actual return	(3)						220
8	Unexpected gain	$150			(4)			
9	Amortization of PSC	(5)		$ 55				
10	Contributions		$800					800
11	Benefits						200	200
12	Liability increase				(6)		365	
13	Journal entry	(7)	(8)	(9)	(10)	(11)		
14	Accumulated OCI, Dec. 31, 2024			1,100	0			
15	Balance, Dec. 31, 2025			$1,045	$215	$1,225	$3,745	$2,520

Instructions

a. Determine the missing amounts in the 2025 pension worksheet, indicating whether the amounts are debits or credits.

b. Prepare the journal entry to record 2025 pension expense for Usher Inc.

c. The accounting staff has heard of a pension accounting procedure called "corridor amortization." Is Usher required to record any amounts for corridor amortization in (1) 2025? In (2) 2026? Explain.

***E19.19 (LO 6, 7) (Postretirement Benefit Expense Computation)** Kreter Co. provides the following information about its postretirement benefit plan for the year 2025.

Service cost	$ 45,000
Contribution to the plan	10,000
Actual and expected return on plan assets	11,000
Benefits paid	20,000
Plan assets at January 1, 2025	110,000
Accumulated postretirement benefit obligation at January 1, 2025	330,000
Discount rate	8%

Instructions

Compute the postretirement benefit expense for 2025.

***E19.20 (LO 6, 7) (Postretirement Benefit Worksheet)** Using the information in E19.19, prepare a worksheet inserting January 1, 2025, balances, and showing December 31, 2025, balances. Prepare the journal entry recording postretirement benefit expense.

***E19.21 (LO 6, 7) (Postretirement Benefit Expense Computation)** Garner Inc. provides the following information related to its postretirement benefits for the year 2025.

Accumulated postretirement benefit obligation at January 1, 2025	$710,000
Actual and expected return on plan assets	34,000
Prior service cost amortization	21,000
Discount rate	10%
Service cost	83,000

Instructions

Compute postretirement benefit expense for 2025.

***E19.22 (LO 6, 7) (Postretirement Benefit Expense Computation)** Englehart Co. provides the following information about its postretirement benefit plan for the year 2025.

Service cost	$ 90,000
Prior service cost amortization	3,000
Contribution to the plan	56,000
Actual and expected return on plan assets	62,000
Benefits paid	40,000
Plan assets at January 1, 2025	710,000
Accumulated postretirement benefit obligation at January 1, 2025	760,000
Accumulated OCI (PSC) at January 1, 2025	100,000 Dr.
Discount rate	9%

Instructions

Compute the postretirement benefit expense for 2025.

***E19.23 (LO 6, 7) (Postretirement Benefit Worksheet)** Using the information in E19.22, prepare a worksheet inserting January 1, 2025, balances, showing December 31, 2025, balances, and the journal entry recording postretirement benefit expense.

***E19.24 (LO 6, 7) (Postretirement Benefit Worksheet—Missing Amounts)** The accounting staff of Holder Inc. has prepared the following postretirement benefit worksheet. Unfortunately, several entries in the worksheet are not decipherable. The company has asked your assistance in completing the worksheet and completing the accounting tasks related to the pension plan for 2025.

AutoSave Off

	A	B	C	D	E	F	G
1	**Postretirement Benefit Worksheet—Holder Inc.**						
2		**General Journal Entries**				**Memo Record**	
3	**Items**	**Annual Expense**	**Cash**	**Other Comprehensive Income—PSC**	**Postretirement Asset/Liability**	**APBO**	**Plan Assets**
4	Balance, Jan. 1, 2025				$290,000	$410,000	$120,000
5	Service cost	(1)				56,000	
6	Interest cost	(2)				36,900	
7	Actual/Expected return	(3)					2,000
8	Contributions		$66,000				(4)
9	Benefits					5,000	5,000
10	Amortization of PSC	$3,000		(5)			
11	Journal entry for 2025	(6)	(7)	(8)	(9)		
12	Accumulated OCI, Dec. 31, 2024			30,000 Dr.			
13	Balance, Dec. 31, 2025			$27,000 Dr.	$314,900 Cr.	$497,900 Cr.	$183,000 Dr.

Sheet1

Instructions

a. Determine the missing amounts in the 2025 postretirement worksheet, indicating whether the amounts are debits or credits.

b. Prepare the journal entry to record 2025 postretirement expense for Holder.

c. What discount rate is Holder using in accounting for the interest on its other postretirement benefit plan? Explain.

Problems

P19.1 (LO 1, 2, 3, 4) Excel (2-Year Worksheet) On January 1, 2025, Harrington Company has the following defined benefit pension plan balances.

Projected benefit obligation	$4,500,000
Fair value of plan assets	4,200,000

The interest (settlement) rate applicable to the plan is 10%. On January 1, 2026, the company amends its pension agreement so that prior service costs of $500,000 are created. Other data related to the pension plan are as follows.

	2025	2026
Service cost	$150,000	$180,000
Prior service cost amortization	–0–	90,000
Contributions (funding) to the plan	240,000	285,000
Benefits paid	200,000	280,000
Actual return on plan assets	252,000	260,000
Expected rate of return on assets	6%	8%

Instructions

a. Prepare a pension worksheet for the pension plan for 2025 and 2026.

b. For 2026, prepare the journal entry to record pension-related amounts.

P19.2 (LO 1, 2, 3, 4, 5) Groupwork (3-Year Worksheet, Journal Entries, and Reporting) Jackson Company adopts acceptable accounting for its defined benefit pension plan on January 1, 2024, with the following beginning balances: plan assets $200,000; projected benefit obligation $250,000. Other data relating to 3 years' operation of the plan are as follows.

	2024	2025	2026
Annual service cost	$16,000	$ 19,000	$ 26,000
Settlement rate and expected rate of return	10%	10%	10%
Actual return on plan assets	18,000	22,000	24,000
Annual funding (contributions)	16,000	40,000	48,000
Benefits paid	14,000	16,400	21,000
Prior service cost (plan amended, 1/1/25)		160,000	
Amortization of prior service cost		54,400	41,600
Change in actuarial assumptions establishes a December 31, 2026, projected benefit obligation of:			520,000

Instructions

a. Prepare a pension worksheet presenting all 3 years' pension balances and activities.

b. Prepare the journal entries (from the worksheet) to reflect all pension plan transactions and events at December 31 of each year.

c. Indicate the pension-related amounts reported in the financial statements for 2026.

P19.3 (LO 1, 2, 3, 4, 5) (Pension Expense, Journal Entries, Amortization of Loss) Gottschalk Company sponsors a defined benefit plan for its 100 employees. On January 1, 2025, the company's actuary provided the following information.

Accumulated other comprehensive loss (PSC)	$150,000
Pension plan assets (fair value and market-related asset value)	200,000
Accumulated benefit obligation	260,000
Projected benefit obligation	380,000

The average remaining service period for the participating employees is 10 years. All employees are expected to receive benefits under the plan. On December 31, 2025, the actuary calculated that the present value of future benefits earned for employee services rendered in the current year amounted to $52,000; the projected benefit obligation was $490,000; fair value of pension assets was $276,000; the accumulated benefit obligation amounted to $365,000. The expected return on plan assets and the discount rate on the projected benefit obligation were both 10%. The actual return on plan assets is $11,000. The company's current year's contribution to the pension plan amounted to $65,000. No benefits were paid during the year.

Instructions

a. Determine the components of pension expense that the company would recognize in 2025. (With only one year involved, you need not prepare a worksheet.)

b. Prepare the journal entry to record the pension expense and the company's funding of the pension plan in 2025.

c. Compute the amount of the 2025 increase/decrease in gains or losses and the amount to be amortized in 2025 and 2026.

d. Indicate the pension amounts reported in the financial statements as of December 31, 2025.

P19.4 (LO 1, 2, 3, 4) Excel (Pension Expense, Journal Entries for 2 Years) Gordon Company sponsors a defined benefit pension plan. The following information related to the pension plan is available for 2025 and 2026.

	2025	2026
Plan assets (fair value), December 31	$699,000	$849,000
Projected benefit obligation, January 1	700,000	800,000
Pension asset/liability, January 1	140,000 Cr.	?
Prior service cost, January 1	250,000	240,000
Service cost	60,000	90,000
Actual and expected return on plan assets	24,000	30,000
Amortization of prior service cost	10,000	12,000
Contributions (funding)	115,000	120,000
Accumulated benefit obligation, December 31	500,000	550,000
Interest/settlement rate	9%	9%

No benefits were paid in 2025 or 2026.

Instructions

a. Compute pension expense for 2025 and 2026.

b. Prepare the journal entries to record the pension expense and the company's funding of the pension plan for both years.

P19.5 (LO 2, 3, 4) (Computation of Pension Expense, Amortization of Net Gain or Loss–Corridor Approach, Journal Entries for 3 Years) Hiatt Toothpaste Company initiates a defined benefit pension plan for its 50 employees on January 1, 2025. The insurance company which administers the pension plan provided the following selected information for the years 2025, 2026, and 2027.

	For Year Ended December 31,		
	2025	2026	2027
Plan assets (fair value)	$50,000	$ 85,000	$180,000
Accumulated benefit obligation	45,000	165,000	292,000
Projected benefit obligation	60,000	200,000	324,000
Net (gain) loss (for purposes of corridor calculation)	–0–	78,400	81,033
Employer's funding contribution (made at end of year)	50,000	60,000	105,000

There were no balances as of January 1, 2025, when the plan was initiated. The actual and expected return on plan assets was 10% over the 3-year period, but the settlement rate used to discount the company's pension obligation was 13% in 2025, 11% in 2026, and 8% in 2027. The service cost component of net periodic pension expense amounted to the following: 2025, $60,000; 2026, $85,000; and 2027, $119,000. The average remaining service life per employee is 12 years. No benefits were paid in 2025, $30,000 of benefits were paid in 2026, and $18,500 of benefits were paid in 2027 (all benefits paid at end of year).

Instructions

(Round to the nearest dollar.)

a. Calculate the amount of net periodic pension expense that the company would recognize in 2025, 2026, and 2027.

b. Prepare the journal entries to record net periodic pension expense, employer's funding contribution, and related pension amounts for the years 2025, 2026, and 2027.

P19.6 (LO 3, 4) Groupwork (Computation of Prior Service Cost Amortization, Pension Expense, Journal Entries, and Net Gain or Loss) Aykroyd Inc. has sponsored a noncontributory, defined benefit pension plan for its employees since 2012. Prior to 2025, cumulative net pension expense recognized equaled cumulative contributions to the plan. Other relevant information about the pension plan on January 1, 2025, is as follows.

1. The company has 200 employees. All these employees are expected to receive benefits under the plan. The average remaining service life per employee is 12 years.

2. The projected benefit obligation amounted to $5,000,000 and the fair value of pension plan assets was $3,000,000. The market-related asset value was also $3,000,000. Unrecognized prior service cost was $2,000,000.

On December 31, 2025, the projected benefit obligation and the accumulated benefit obligation were $4,850,000 and $4,025,000, respectively. The fair value of the pension plan assets amounted to $4,100,000 at the end of the year. A 10% settlement rate and a 10% expected asset return rate were used in the actuarial present value computations in the pension plan. The present value of benefits attributed by the pension benefit formula to employee service in 2025 amounted to $200,000. The employer's contribution to the plan assets amounted to $775,000 in 2025. This problem assumes no payment of pension benefits.

Instructions

(Round all amounts to the nearest dollar.)

a. Prepare a schedule, based on the average remaining life per employee, showing the prior service cost that would be amortized as a component of pension expense for 2025, 2026, and 2027.

b. Compute pension expense for the year 2025.

c. Compute the amount of the 2025 increase/decrease in net gains or losses and the amount to be amortized in 2025 and 2026.

d. Prepare the journal entries required to report the accounting for the company's pension plan for 2025.

P19.7 (LO 2, 3, 4) (Pension Worksheet) Hanson Corp. sponsors a defined benefit pension plan for its employees. On January 1, 2025, the following balances related to this plan.

Plan assets (market-related value)	$520,000
Projected benefit obligation	700,000
Pension asset/liability	180,000 Cr.
Prior service cost	81,000
Net gain or loss (debit)	91,000

As a result of the operation of the plan during 2025, the actuary provided the following additional data for 2025.

Service cost	$108,000
Settlement rate, 9%; expected return rate, 10%	
Actual return on plan assets	48,000
Amortization of prior service cost	25,000
Contributions	133,000
Benefits paid retirees	85,000
Average remaining service life of active employees	10 years

Instructions

Using the preceding data, compute pension expense for Hanson for the year 2025 by preparing a pension worksheet that shows the journal entry for pension expense. Use the market-related asset value to compute the expected return and for corridor amortization.

P19.8 (LO 1, 2, 3, 4, 5) Groupwork (Comprehensive 2-Year Worksheet) Lemke Company sponsors a defined benefit pension plan for its employees. The following data relate to the operation of the plan for the years 2025 and 2026.

	2025	2026
Projected benefit obligation, January 1	$600,000	
Plan assets (fair value and market-related value), January 1	410,000	
Pension asset/liability, January 1	190,000 Cr.	
Prior service cost, January 1	160,000	
Service cost	40,000	$ 59,000
Settlement rate	10%	10%
Expected rate of return	10%	10%
Actual return on plan assets	36,000	61,000
Amortization of prior service cost	70,000	50,000
Annual contributions	97,000	81,000
Benefits paid retirees	31,500	54,000
Increase in projected benefit obligation due to changes in actuarial assumptions	87,000	–0–
Accumulated benefit obligation at December 31	721,800	789,000
Average service life of all employees		20 years
Vested benefit obligation at December 31		464,000

Instructions

a. Prepare a pension worksheet presenting both years 2025 and 2026 and accompanying computations and amortization of the loss (2026) using the corridor approach.

b. Prepare the journal entries (from the worksheet) to reflect all pension plan transactions and events at December 31 of each year.

c. For 2026, indicate the pension amounts reported in the financial statements.

P19.9 (LO 1, 2, 3, 4, 5) Groupwork (Comprehensive 2-Year Worksheet) Hobbs Co. has the following defined benefit pension plan balances on January 1, 2025.

Projected benefit obligation	$4,600,000
Fair value of plan assets	4,600,000

The interest (settlement) rate applicable to the plan is 10%. On January 1, 2026, the company amends its pension agreement so that prior service costs of $600,000 are created. Other data related to the pension plan are as follows.

	2025	2026
Service cost	$150,000	$170,000
Prior service cost amortization	–0–	90,000
Contributions (funding) to the plan	200,000	184,658
Benefits paid	220,000	280,000
Actual return on plan assets	252,000	350,000
Expected rate of return on assets	6%	8%

Instructions

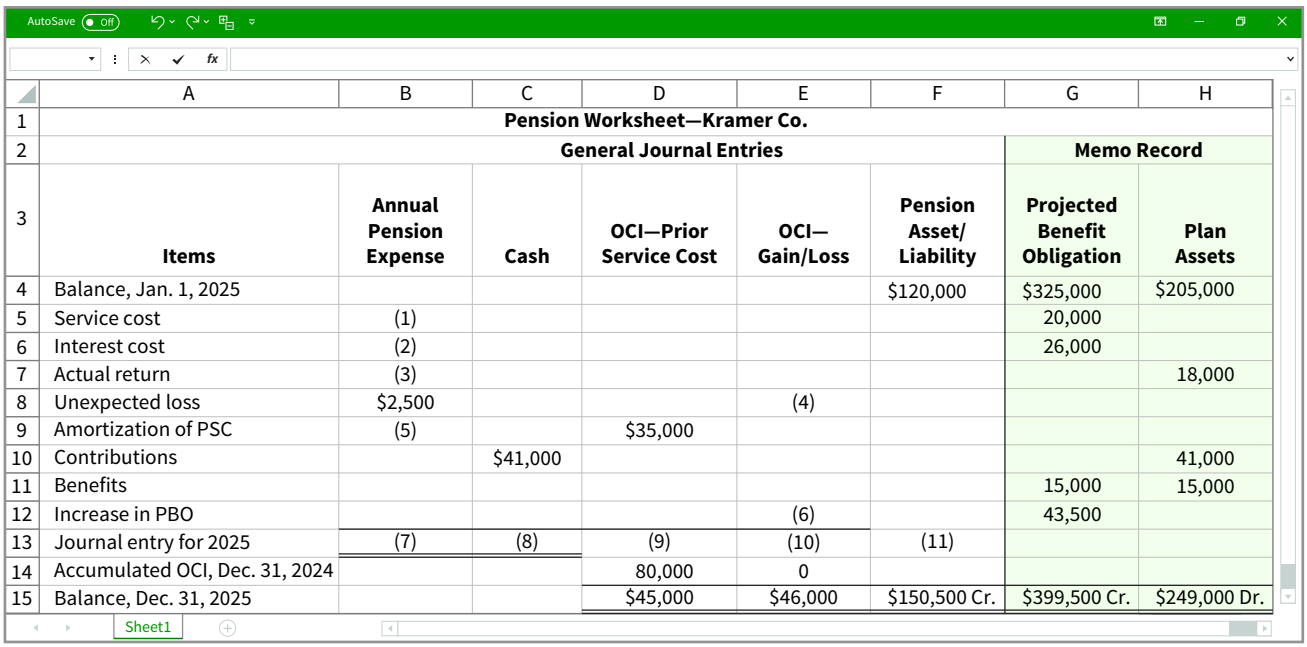
a. Prepare a pension worksheet for the pension plan in 2025.

b. Prepare any journal entries related to the pension plan that would be needed at December 31, 2025.

c. Prepare a pension worksheet for 2026 and any journal entries related to the pension plan as of December 31, 2026.

d. Indicate the pension-related amounts reported in the 2026 financial statements.

P19.10 (LO 1, 2, 3, 4) (Pension Worksheet—Missing Amounts) Kramer Co. has prepared the following pension worksheet. Unfortunately, several entries in the worksheet are not decipherable. The company has asked your assistance in completing the worksheet and completing the accounting tasks related to the pension plan for 2025.



	A	B	C	D	E	F	G	H
1	Pension Worksheet—Kramer Co.							
2		General Journal Entries					Memo Record	
3	Items	Annual Pension Expense	Cash	OCI—Prior Service Cost	OCI—Gain/Loss	Pension Asset/ Liability	Projected Benefit Obligation	Plan Assets
4	Balance, Jan. 1, 2025					$120,000	$325,000	$205,000
5	Service cost	(1)					20,000	
6	Interest cost	(2)					26,000	
7	Actual return	(3)						18,000
8	Unexpected loss	$2,500			(4)			
9	Amortization of PSC	(5)		$35,000				
10	Contributions		$41,000					41,000
11	Benefits						15,000	15,000
12	Increase in PBO				(6)		43,500	
13	Journal entry for 2025	(7)	(8)	(9)	(10)	(11)		
14	Accumulated OCI, Dec. 31, 2024			80,000	0			
15	Balance, Dec. 31, 2025			$45,000	$46,000	$150,500 Cr.	$399,500 Cr.	$249,000 Dr.

Instructions

a. Determine the missing amounts in the 2025 pension worksheet, indicating whether the amounts are debits or credits.

b. Prepare the journal entry to record 2025 pension expense for Kramer.

c. Determine the following for Kramer for 2025: (1) settlement rate used to measure the interest on the liability and (2) expected return on plan assets.

P19.11 (LO 1, 2, 3, 4, 5) (Pension Worksheet) The following data relate to the operation of Kramer Co.'s pension plan in 2026. The pension worksheet for 2025 is provided in P19.10.

Service cost	$59,000
Actual return on plan assets	32,000
Amortization of prior service cost	28,000
Annual contributions	51,000
Benefits paid retirees	27,000
Average service life of all employees	25 years

For 2026, Kramer will use the same assumptions as 2025 for the expected rate of return on plan assets. The settlement rate for 2026 is 10%.

Instructions

a. Prepare a pension worksheet for 2026 and accompanying computations and amortization of the loss, if any, in 2026 using the corridor approach.

b. Prepare the journal entries (from the worksheet) to reflect all pension plan transactions and events at December 31.

c. Indicate the pension amounts reported in the financial statements.

P19.12 (LO 1, 2, 3, 4, 5) (Pension Worksheet) Larson Corp. sponsors a defined benefit pension plan for its employees. On January 1, 2026, the following balances related to this plan.

Plan assets (market-related value)	$270,000
Projected benefit obligation	340,000
Pension asset/liability	70,000 Cr.
Prior service cost	90,000
OCI—Loss	39,000

As a result of the operation of the plan during 2026, the actuary provided the following additional data for 2026.

Service cost	$45,000
Actual return on plan assets	27,000
Amortization of prior service cost	12,000
Contributions	65,000
Benefits paid retirees	41,000
Settlement rate	7%
Expected return on plan assets	8%
Average remaining service life of active employees	10 years

Instructions

a. Compute pension expense for Larson for the year 2026 by preparing a pension worksheet that shows the journal entry for pension expense.

b. Indicate the pension amounts reported in the financial statements.

***P19.13 (LO 6, 7) Groupwork (Postretirement Benefit Worksheet)** Hollenbeck Foods Inc. sponsors a postretirement medical and dental benefit plan for its employees. The following balances relate to this plan on January 1, 2025.

Plan assets	$200,000
Expected postretirement benefit obligation	820,000
Accumulated postretirement benefit obligation	200,000
No prior service costs or OCI balances exist.	

As a result of the plan's operation during 2025, the following additional data are provided by the actuary.

Service cost is $70,000

Discount rate is 10%

Contributions to plan are $65,000

Expected return on plan assets is $10,000

Actual return on plan assets is $15,000

Benefits paid to employees are $44,000

Average remaining service to full eligibility: 20 years

Instructions

a. Using this data, compute the net periodic postretirement benefit cost for 2025 by preparing a worksheet that shows the journal entry for postretirement expense and the year-end balances in the related postretirement benefit memo accounts. (Assume that contributions and benefits are paid at the end of the year.)

b. Prepare any journal entries related to the postretirement plan for 2025 and indicate the postretirement amounts reported in the financial statements for 2025.

***P19.14 (LO 6, 7) (Postretirement Benefit Worksheet—2 Years)** Elton Co. has the following postretirement benefit plan balances on January 1, 2025.

Accumulated postretirement benefit obligation	$2,250,000
Fair value of plan assets	2,250,000

The interest (settlement) rate applicable to the plan is 10%. On January 1, 2026, the company amends the plan so that prior service costs of $175,000 are created. Other data related to the plan are as follows.

	2025	2026
Service costs	$ 75,000	$ 85,000
Prior service costs amortization	–0–	12,000
Contributions (funding) to the plan	45,000	35,000
Benefits paid	40,000	45,000
Actual return on plan assets	140,000	120,000
Expected rate of return on assets	8%	6%

Instructions

a. Prepare a worksheet for the postretirement plan in 2025.

b. Prepare any journal entries related to the postretirement plan that would be needed at December 31, 2025.

c. Prepare a worksheet for 2026 and any journal entries related to the postretirement plan as of December 31, 2026.

d. Indicate the postretirement-benefit–related amounts reported in the 2026 financial statements.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ19.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What kinds of pension plans does P&G provide its employees?

b. What was P&G's pension expense for 2020 and 2019 related to its defined benefit plan?

c. What is the impact of P&G's pension plans for 2020 on its financial statements?

d. What information does P&G provide on the target allocation of its pension assets? (Compare the asset allocation for "Pensions and Other Retiree Benefits.") How do the allocations relate to the expected returns on these assets?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ19.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What kind of pension plans do Coca-Cola and PepsiCo provide their employees?

b. What net periodic pension expense (cost) did Coca-Cola and PepsiCo report in 2020?

c. What is the year-end 2020 funded status of Coca-Cola's and PepsiCo's plans (include international)?

d. What relevant rates were used by Coca-Cola and PepsiCo in computing their pension amounts?

e. Compare the expected benefit payments and contributions for Coca-Cola and PepsiCo.

*Financial Statement Analysis Case: General Electric

UYJ19.3 A *Wall Street Journal* article discussed a $1.8 billion charge to income made by **General Electric** for postretirement benefit costs. It was attributed to previously unrecognized healthcare and life insurance cost. As financial vice president and controller for Peake, Inc., you found this article interesting because the president recently expressed interest in adopting a postemployment benefit program for Peake's employees, to complement the company's existing defined benefit plan. The president, Martha Beyerlein, wants to know how the expense on the new plan will be determined and what impact the accounting for the plan will have on Peake's financial statements.

Instructions

a. As financial vice president and controller of Peake, Inc., explain the calculation of postemployment benefit expense under GAAP, and indicate how the accounting for the plan will affect Peake's financial statements.

b. Discuss the similarities and differences in the accounting for the other postemployment benefit plan relative to the accounting for the defined benefit plan.

Accounting, Analysis, and Principles

UYJ19.4 PENCOMP's balance sheet at December 31, 2025, is as follows.

PENCOMP, Inc.
Balance Sheet
As of December 31, 2025

Assets		**Liabilities**	
Cash	$ 438	Notes payable	$1,000
Inventory	1,800	Pension liability	344
Total current assets	2,238	Total liabilities	1,344
Plant and equipment	2,000	**Stockholders' equity**	
Accumulated depreciation	(240)	Common stock	2,000
	1,760	Retained earnings	896
Total assets	$3,998	Accumulated other comprehensive income	(242)
		Total stockholders' equity	2,654
		Total liabilities and stockholders' equity	$3,998

Additional information concerning PENCOMP's defined benefit pension plan is as follows.

Projected benefit obligation at 12/31/25	$ 820.5
Plan assets (fair value) at 12/31/25	476.5
Unamortized past service cost at 12/31/25	150.0
Amortization of past service cost during 2026	15.0
Service cost for 2026	42.0
Discount rate	10%
Expected rate of return on plan assets in 2026	12%
Actual return on plan assets in 2026	10.4
Contributions to pension fund in 2026	70.0
Benefits paid during 2026	40.0
Expected remaining service life of employees	15.0
Average period to vesting of prior service costs	10.0
Unamortized net loss due to changes in actuarial assumptions and deferred net losses on plan assets at 12/31/25	92.0

Other information about PENCOMP is as follows.

Salary expense, all paid with cash during 2026	$ 700.0
Sales, all for cash	3,000.0
Purchases, all for cash	2,000.0
Inventory at 12/31/26	1,800.0

Property originally cost $2,000 and is depreciated on a straight-line basis over 25 years with no residual value.
Interest on the note payable is 10% annually and is paid in cash on 12/31 of each year.
Dividends declared and paid are $200 in 2026.

Accounting

Prepare an income statement for 2026 and a balance sheet as of December 31, 2026. Also, prepare the pension expense journal entry for the year ended December 31, 2026. Round to the nearest tenth (e.g., round 2.87 to 2.9).

Analysis

Compute return on equity for PENCOMP for 2026 (assume stockholders' equity is equal to year-end average stockholders' equity). Do you think an argument can be made for including some or even all of the change in accumulated other comprehensive income (due to pensions) in the numerator of return on equity? Illustrate that calculation.

Principles

Explain a rationale for why the FASB has (so far) decided to exclude from the current period income statement the effects of pension plan amendments and gains and losses due to changes in actuarial assumptions.

Developing Your Professional Skills

Critical-Thinking Cases

CT19.1 (LO 1) (Pension Terminology and Theory) Many business organizations have been concerned with providing for the retirement of employees since the late 1800s. Increase in this concern resulted in the establishment of private pension plans in most large companies and in many medium- and small-sized ones.

The substantial growth of these plans, both in numbers of employees covered and in amounts of retirement benefits, has increased the significance of pension costs in relation to the financial position, results of operations, and cash flows of many companies. In examining the costs of pension plans, a CPA encounters certain terms. The components of pension costs that the terms represent must be dealt with appropriately if generally accepted accounting principles are to be reflected in the financial statements of entities with pension plans.

Instructions

a. Define a private pension plan. How does a contributory pension plan differ from a noncontributory plan?

b. Differentiate between "accounting for the employer" and "accounting for the pension fund."

c. Explain the terms "funded" and "pension liability" as they relate to:

1. The pension fund.

2. The employer.

d. **1.** Discuss the theoretical justification for accrual recognition of pension costs.

2. Discuss the relative objectivity of the measurement process of accrual versus cash (pay-as-you-go) accounting for annual pension costs.

e. Distinguish among the following as they relate to pension plans.

1. Service cost.

2. Prior service costs.

3. Vested benefits.

CT19.2 (LO 1) Writing (Pension Terminology) The following items appear on Brueggen Company's financial statements.

1. Under the caption Assets:
Pension asset/liability.

2. Under the caption Liabilities:
Pension asset/liability.

3. Under the caption Stockholders' Equity:
Prior service cost as a component of Accumulated Other Comprehensive Income.

4. On the income statement:
Pension expense.

Instructions

Explain the significance of each of the items above on corporate financial statements. (*Note:* All items set forth above are not necessarily to be found on the statements of a single company.)

CT19.3 (LO 1) (Basic Terminology) In examining the costs of pension plans, Helen Kaufman, CPA, encounters certain terms. The components of pension costs that the terms represent must be dealt with appropriately if generally accepted accounting principles are to be reflected in the financial statements of entities with pension plans.

Instructions

a. **1.** Discuss the theoretical justification for accrual recognition of pension costs.

2. Discuss the relative objectivity of the measurement process of accrual versus cash (pay-as-you-go) accounting for annual pension costs.

b. Explain the following terms as they apply to accounting for pension plans.

1. Market-related asset value.

2. Projected benefit obligation.

3. Corridor approach.

c. What information should be disclosed about a company's pension plans in its financial statements and its notes?

(AICPA adapted)

CT19.4 (LO 1) Writing (Major Pension Concepts) Davis Corporation is a medium-sized manufacturer of paperboard containers and boxes. The corporation sponsors a noncontributory, defined benefit pension plan that covers its 250 employees. Sid Cole has recently been hired as president of Davis Corporation. While reviewing last year's financial statements with Carol Dilbeck, controller, Cole expressed confusion about several of the items in the footnote to the financial statements relating to the pension plan. In part, the footnote reads as follows.

> **Note J.** The company has a defined benefit pension plan covering substantially all of its employees. The benefits are based on years of service and the employee's compensation during the last four years of employment. The company's funding policy is to contribute annually the maximum amount allowed under the federal tax code. Contributions are intended to provide for benefits expected to be earned in the future as well as those earned to date.

The net periodic pension expense on Davis Corporation's comparative income statement was $72,000 in 2025 and $57,680 in 2024.

The following are selected figures from the plan's funded status and amounts recognized in the Davis Corporation's balance sheet at December 31, 2025 ($000 omitted).

Actuarial present value of benefit obligations:

Accumulated benefit obligation (including vested benefits of $636)	$ (870)
Projected benefit obligation	$(1,200)
Plan assets at fair value	1,050
Projected benefit obligation in excess of plan assets	$ (150)

Given that Davis Corporation's work force has been stable for the last 6 years, Cole could not understand the increase in the net periodic pension expense. Dilbeck explained that the net periodic pension expense consists of several elements, some of which may increase or decrease the net expense.

Instructions

a. The determination of the net periodic pension expense is a function of five elements. List and briefly describe each of the elements.

b. Describe the major difference and the major similarity between the accumulated benefit obligation and the projected benefit obligation.

c. **1.** Explain why pension gains and losses are not recognized on the income statement in the period in which they arise.

2. Briefly describe how pension gains and losses are recognized.

(AICPA adapted)

CT19.5 (LO 5) Writing (Implications of GAAP Rules on Pensions) Jill Vogel and Pete Dell have to do a class presentation on GAAP rules for reporting pension information. In developing the class presentation, they decided to provide the class with a series of questions related to pensions and then discuss the answers in class. Given that the class has all read the rules related to pension accounting and reporting, they felt this approach would provide a lively discussion. Here are the questions:

1. In an article in *Businessweek* related to pensions, it was reported that the discount rates used by the largest 200 companies for pension reporting ranged from 5% to 11%. How can such a situation exist, and does GAAP alleviate this problem?
2. An article indicated that when GAAP rules were issued related to pensions, it caused an increase in the liability for pensions for approximately 20% of companies. Why might this situation occur?
3. A recent article noted that while "smoothing" is not necessarily an accounting virtue, pension accounting has long been recognized as an exception—an area of accounting in which at least some dampening of market swings is appropriate. This is because pension funds are managed so that their performance is insulated from the extremes of short-term market swings. A pension expense that reflects the volatility of market swings might, for that reason, convey information of little relevance. Are these statements true?
4. Understanding the impact of the changes required in pension reporting requires detailed information about its pension plan(s) and an analysis of the relationship of many factors, particularly the:
   a. Type of plan(s) and any significant amendments.
   b. Plan participants.
   c. Funding status.
   d. Actuarial funding method and assumptions currently used.

   What impact does each of these items have on financial statement presentation?
5. An article noted "You also need to decide whether to amortize gains and losses using the corridor method, or to use some other systematic method. What is the corridor method and what is its purpose?

Instructions

What answers do you believe Jill and Pete gave to each of these questions?

CT19.6 (LO 4) Writing (Gains and Losses, Corridor Amortization) Vickie Plato, accounting clerk in the personnel office of Streisand Corp., has begun to compute pension expense for 2027 but is unsure whether she should include the amortization of unrecognized gains/losses. She is currently working with the following beginning-of-the-year present values for the projected benefit obligation and market-related values for the pension plan:

	Projected Benefit Obligation	Plan Assets Value
2024	$2,200,000	$1,900,000
2025	2,400,000	2,500,000
2026	2,900,000	2,600,000
2027	3,900,000	3,000,000

The average remaining service life per employee in 2024 and 2025 is 10 years; in 2026 and 2027, it is 12 years. The net gain or loss that occurred during each year is as follows.

2024	$280,000 loss
2025	85,000 loss
2026	12,000 loss
2027	25,000 gain

(In working the solution, you must aggregate the unrecognized gains and losses to arrive at year-end balances.)

Instructions

You are the manager in charge of accounting. Write a memo to Vickie Plato, explaining why in some years she must amortize some of the net gains and losses and in other years she does not need to. In order to explain this situation fully, you must compute the amount of net gain or loss that is amortized and charged to pension expense in each of the 4 years listed above. Include an appropriate amortization schedule, referring to it whenever necessary.

CT19.7 (LO 4) Ethics (Nonvested Employees—An Ethical Dilemma) Thinken Technology recently merged with College Electronix (CE), a computer graphics company. In performing a comprehensive audit of CE's accounting system, Gerald Ott, internal audit manager for Thinken Technology, discovered that the new subsidiary did not record pension assets and liabilities, subject to GAAP.

The net present value of CE's pension assets was $15.5 million, the vested benefit obligation was $12.9 million, and the projected benefit obligation was $17.4 million. Ott reported this audit finding to Julie

Habbe, the newly appointed controller of CE. A few days later, Habbe called Ott for his advice on what to do. Habbe started her conversation by asking, "Can't we eliminate the negative income effect of our pension dilemma simply by terminating the employment of nonvested employees before the end of our fiscal year?"

Instructions

How should Ott respond to Habbe's remark about firing nonvested employees?

FASB Codification References

[1] FASB ASC 960. [Predecessor literature: "Accounting and Reporting by Defined Benefit Pension Plans," *Statement of Financial Accounting Standards No. 35* (Stamford, Conn.: FASB, 1979).]

[2] FASB ASC 715-70-50-1. [Predecessor literature: "Employers' Accounting for Pension Plans," *Statement of Financial Accounting Standards No. 87* (Stamford, Conn.: FASB, 1985), paras. 63–66.]

[3] FASB ASC 715-30-25-1. [Predecessor literature: "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans: An Amendment to SFAS Nos. 87, 88, 106, and 132(R)," *Statement of Financial Accounting Standards No. 158* (Norwalk, Conn.: FASB, 2006).]

[4] FASB ASC 715-30-35-22. [Predecessor literature: "Employers' Accounting for Pension Plans," *Statement of Financial Accounting Standards No. 87* (Stamford, Conn.: FASB, 1985), par. 30.]

[5] FASB ASC 220-10-45-13. [Predecessor literature: "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans: An Amendment of SFAS Nos. 87, 88, 106, and 132(R)," *Statement of Financial Accounting Standards No. 158* (Norwalk, Conn.: FASB, 2006), par. B41.]

[6] FASB ASC 715-20-45-3A. [Predecessor literature: None.]

[7] FASB ASC 715-20-50. [Predecessor literature: "Employers' Disclosure about Pensions and Other Postretirement Benefits," *Statement of Financial Accounting Standards No. 132* (Stamford, Conn.: FASB, 1998; revised 2003); and "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans: An Amendment of SFAS Nos. 87, 88, 106, and 132(R)," *Statement of Financial Accounting Standards No. 158* (Norwalk, Conn.: FASB, 2006).]

[8] FASB ASC 715-20-50-1. [Predecessor literature: None.]

[9] FASB ASC 715-30-05-9. [Predecessor literature: "Employers' Accounting for Settlements and Curtailments of Defined Benefit Pension Plans and for Termination Benefits," *Statement of Financial Accounting Standards No. 88* (Stamford, Conn.: FASB, 1985).]

[10] FASB ASC 715-60. [Predecessor literature: "Employers' Accounting for Postretirement Benefits Other Than Pensions," *Statement of Financial Accounting Standards No. 106* (Norwalk, Conn.: FASB, 1990).]

[11] FASB ASC 712-10-05. [Predecessor literature: "Employers' Accounting for Postemployment Benefits," *Statement of Financial Accounting Standards No. 112* (Norwalk, Conn.: FASB, 1992).]

[12] FASB ASC 715-60-35-9. [Predecessor literature: "Employers' Accounting for Postretirement Benefits Other Than Pensions," *Statement of Financial Accounting Standards No. 106* (Norwalk, Conn.: FASB, 1990), paras. 46–66.]

[13] FASB ASC 715-60-25. [Predecessor literature: "Employers' Accounting for Postretirement Benefits Other Than Pensions," *Statement of Financial Accounting Standards No. 106* (Norwalk, Conn.: FASB, 1990), par. 163.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE19.1 Access the glossary ("Master Glossary") to answer the following.

a. What is an accumulated benefit obligation?

b. What is a defined benefit postretirement plan?

c. What is the definition of "actuarial present value"?

d. What is a prior service cost?

CE19.2 In general, how can an employer choose an appropriate discount rate for its pension plan? What information could an employer use in choosing a discount rate?

CE19.3 If an employer has a defined benefit pension plan, what components would make up its net periodic pension cost?

CE19.4 What information about its pension plan must a publicly traded company disclose in its interim financial statements?

Codification Research Case

Monat Company has grown rapidly since its founding in 2004. To instill loyalty in its employees, Monat is contemplating establishment of a defined benefit plan. Monat knows that lenders and potential investors will pay close attention to the impact of the pension plan on the company's financial statements, particularly any gains or losses that develop in the plan. Monat has asked you to conduct some research on the accounting for gains and losses in a defined benefit plan.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. Briefly describe how pension gains and losses are accounted for.

b. Explain the rationale behind the accounting method described in part (a).

c. What is the related pension asset or liability that will show up on the balance sheet? When will each of these situations occur?

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

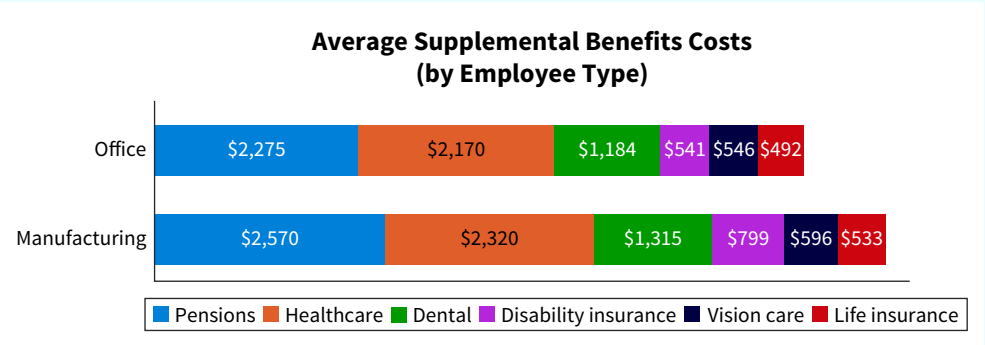
Analytics in Action Activities

Using Data Analytics to Evaluate the Cost of Employee Benefits

Excel

DA19.1 When we think about the compensation cost that an employer incurs, we probably first think about salary. A comprehensive look at compensation, however, would need to include additional benefits like pensions, healthcare, and vacation time. If not managed effectively, these costs can quickly add up.

Consumption of these benefits will vary by individual employees, making it difficult to track and plan for these types of costs. Data analytics and visualizations like the following can really help employers manage these costs while also understand which benefits are perceived as most valuable by their employees.



Required

You are provided with a set of raw employee data, including information on the cost of salary, paid leave, required benefits, and supplemental benefits, as well as the results of an employee survey ranking the importance of the benefits offered. Using Excel, you will create tables, charts, and visualizations to analyze all of the data provided.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 8

Compare the accounting for pensions under GAAP and IFRS.

The accounting for various forms of compensation plans under IFRS is found in *IAS 19* ("Employee Benefits") and *IFRS 2* ("Share-Based Payment"). *IAS 19* addresses the accounting for a wide range of compensation elements—wages, bonuses, postretirement benefits, and compensated absences. The underlying concepts for the accounting for postretirement benefits are similar between GAAP and IFRS—both GAAP and IFRS view pensions and other postretirement benefits as forms of deferred compensation. At present, there are significant differences in the specific accounting provisions as applied to these plans. Following are the key similarities and differences between GAAP and IFRS related to pensions.

Similarities

- IFRS and GAAP separate pension plans into defined contribution plans and defined benefit plans. The accounting for defined contribution plans is similar.
- IFRS and GAAP recognize a pension asset or liability as the funded status of the plan (i.e., defined benefit obligation minus the fair value of plan assets). (Note that the defined benefit obligation is referred to as the projected benefit obligation in GAAP.)
- IFRS and GAAP compute unrecognized past service cost (PSC) (referred to as prior service cost in GAAP) in the same manner. However, IFRS recognizes past service cost as a component of pension expense in income immediately. GAAP amortizes PSC over the remaining service lives of employees.

Differences

- IFRS and GAAP include interest expense on the liability in pension expense. Regarding asset returns, IFRS reduces pension expense by the amount of interest revenue (based on the discount rate times the beginning value of pension assets). GAAP includes an asset return component based on the expected return on plan assets.
- Under IFRS, companies recognize both liability and asset gains and losses (referred to as remeasurements) in other comprehensive income. These gains and losses are not "recycled" into income in subsequent periods. GAAP recognizes liability and asset gains and losses in "Accumulated other comprehensive income" and amortizes these amounts to income over remaining service lives, using the "corridor approach."
- The accounting for pensions and other postretirement benefit plans is the same under IFRS. GAAP has separate standards for these types of benefits, and significant differences exist in the accounting.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 20

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Accounting for Leases

WHAT are leases?

A lease is a contractual agreement between a lessor and a lessee. A lease arrangement gives the lessee the right to use specific property, which is owned by the lessor, for a period of time. In return for the use of the property, the lessee makes rental payments over the lease term to the lessor. Have you ever leased a car? You get the right to use the car over a set period of time while making rental payments to the car dealer. At the end of your lease term, you give the car back and stop making payments. You didn't own the car while you leased it, you simply **had the right to use** the car!

WHY is information about leases important?

Leasing has become one of the popular ways that companies secure use of the assets needed in the operations of their businesses. For example, **Apple** leases many of its retail locations; it recently reported a commitment of over $10 billion in future minimum lease payments. **ExxonMobil** leases drilling equipment, tankers, service stations, and other properties. **UPS** leases warehouses, aircraft, aircraft engines, office space and more. Indeed, leasing activity in the United States represents a multi-trillion dollar business. Given the significance of leasing in many companies' operations, investors and creditors need information about the leased assets and obligations to make payments under a lease arrangement. Let's take a look at **Delta Airlines** as an example (see its partial financial statements below).

With total assets of $65 billion and total liabilities of $59 billion, leasing represents over 10% of Delta's assets and over 12% of its liabilities. And lease costs comprise nearly 8% of Delta's operating expenses. So, it is easy to see why investors and creditors need good accounting information about the amounts reported in the balance sheet and income statement as they relate to leases.

Delta Airlines, Inc.

Balance Sheet (in millions)

Assets	
Operating lease right-of-use assets	$5,627
Finance lease assets – Property and equipment	1,062
Total lease assets	$6,689
Liabilities	
Operating lease liabilities	$1,054
Finance lease liabilities	6,095
Total	$7,149

Income Statement (in millions)

Lease costs	
Finance lease cost	
Amortization of right-of-use assets	$110
Interest on lease liabilities	29
Operating lease cost	1,013
Short-term lease cost	500
Variable lease cost	1,456
Total lease cost	$3,108

HOW do we account for leases?

As shown in the Delta example, companies classify lease arrangements as either finance or operating. In either case, lessees **capitalize on the balance sheet all leased assets and liabilities**. Therefore, the balance sheet for a company that uses either a finance lease or an operating lease will be the same. However, for income statement purposes, the reporting of financial information depends on whether the lease is classified as a finance lease or operating lease. Consider your leased car. While you don't own the car, you are committed to making lease payments to the dealership over the term of your lease. Your **personal balance sheet** would report an asset for your right to drive the car over the term of the lease, and you would also have an obligation for the lease payments you are required to make!

What about lessors? Lessors also classify leases as either finance or operating. As you will learn, lessors account for financing leases in a manner similar to the accounting for a loan. Lessors account for operating leases in a manner similar to a rental agreement.

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 20.1 Describe the environment related to leasing transactions.	**20.1 The Leasing Environment** • Lessees • Advantages of leases • Finance and operating leases	Examples **20.1** Lease Classification **20.2** Bargain Purchase Option **20.3** Bargain Renewal Option **20.4** Variable Payments—In Substance Fixed **20.5** Variable Lease Payments **20.6** Termination Option **20.7** Alternative Use Test Put It into Practice LO 20.1 Determine Lease Classifications
LO 20.2 Explain the accounting for finance leases.	**20.2 Finance Leases** • Lessee accounting • Lessor accounting • Sales-type lease example	Put It into Practice LO 20.2 Account for Sales-Type (Finance) Lease
LO 20.3 Explain the accounting for operating leases.	**20.3 Operating Leases** • Lessee accounting • Lessor accounting	Put It into Practice LO 20.3 Account for Operating Lease—Lessee/Lessor
LO 20.4 Discuss the accounting and reporting for special features of lease arrangements.	**20.4 Special Lease Accounting Problems** • Residual values • Other lease adjustments • Bargain purchase options • Short-term leases • Presentation and decision analysis	Examples **20.8** Gross vs. Net Leases **20.9** Right-of-Use Cost Analysis **20.10** Short-Term Lease

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

20.1 The Leasing Environment

LEARNING OBJECTIVE 1

Describe the environment related to leasing transactions.

A **lease** is a contractual agreement between a lessor and a lessee. This arrangement gives the **lessee** the right to use specific property, which is owned by the **lessor**, for a specified period of time. In return for the use of the property, the lessee makes rental payments over the lease term to the lessor. [1] (See the FASB Codification References near the end of the chapter.) If you have ever leased a car or an apartment, you are the lessee, and the car dealer or property owner is the lessor. Without even knowing it, you have probably been party to a lease transaction!

A Look at the Lessee

Aristotle once said, "Wealth does not lie in ownership but in the use of things." Clearly, many U.S. companies have decided that Aristotle is right, as they have become heavily involved in leasing assets rather than owning them. Indeed, leasing is a multi-trillion dollar industry! That is a lot of lease contracts.

What types of assets are being leased? Maybe the better question is what assets are **not** leased? Any type of property, plant, and equipment can be leased, such as buildings, land, railcars, helicopters, bulldozers, barges, CT scanners, and computers. Illustration 20.1 summarizes what several major companies are leasing.

ILLUSTRATION 20.1 What Do Companies Lease?

Company	Description
Apple	"The Company leases various equipment and facilities, including retail space, under noncancelable operating lease arrangements."
ExxonMobil	"Minimum commitments for operating leases, shown on an undiscounted basis, cover drilling equipment, tankers, service stations, and other properties."
JPMorgan Chase	"JPMorgan Chase and its subsidiaries were obligated under a number of noncancelable operating leases for premises and equipment used primarily for banking purposes."
United Parcel Service	"We have finance and operating leases for package centers, airport facilities, warehouses, corporate office space, aircraft, aircraft engines, information technology equipment, vehicles and other various other equipment used in operating our business."
McDonald's	"The Company was the lessee at 15,235 restaurant locations through ground leases (the Company leases the land and the Company or franchisee owns the building) and through other leases (the Company leases land and buildings)."
Starbucks	"Starbucks leases retail stores, roasting and distribution facilities, and office space under operating leases."
TXU	"TXU Energy Holdings and TXU Electric Delivery have entered into operating leases covering various facilities and properties including generation plant facilities, combustion turbines, transportation equipment, mining equipment, data processing equipment, and office space."
Viacom	"The Company has long-term non-cancelable operating lease commitments for office space and equipment, transponders, studio facilities, and vehicles. The Company also enters into leases for satellite transponders."

Source: Company 10-K filings.

Why Is Leasing So Popular?

Lessees

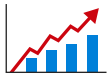
Have you ever been car shopping at a dealership? You probably know that you can purchase a car by getting a loan or paying cash, or you can lease a car. What are the benefits of leasing? Why does a company choose to lease an asset rather than purchase it outright? From the perspective of the **lessee**, leasing can provide significant advantages, such as the following.

1. **100% financing at fixed rates.** You just graduated college, you are starting your first "real" job, and you need a car! Without much savings (yet), you turn to leasing. Leasing allows you to get a reliable car and fixed (predictable) monthly payments, possibly without having to pay anything up front. This benefit is no different for companies, which may choose to lease to help conserve scarce cash—and to help protect them against inflation and increases in the cost of money. The following comment really illustrates the benefits of leasing for many companies: "Our local bank finally came up to 80% of the purchase price but wouldn't go any higher, and they wanted a floating interest rate. We just couldn't afford the down payment, and we needed to lock in a final payment rate we knew we could live with."
2. **Protection against obsolescence.** Adaptive cruise control, exit warning to protect cyclists, lane departure warning, and 360-degree camera: these are just some of the newest technology features in the auto industry. It may not be feasible to buy and sell your car every few years. But in a leasing transaction, you can get all of the latest bells and whistles that new cars offer by turning in your leased vehicle for a new one. For many companies, the benefits of having easy access to the latest and greatest technology simply outweighs the additional cost they may incur to lease.
3. **Flexibility.** Lease agreements may contain less restrictive provisions than other debt agreements. Innovative lessors can tailor a lease agreement to the lessee's special needs. For instance, the duration of the lease—the **lease term**—may be anything from a short period of time to the entire expected economic life of the asset. The rental payments may be level from year to year, or they may increase or decrease in amount. The payment amount may be predetermined or may vary with sales, the prime interest rate, the Consumer Price Index, or some other factor.
4. **Less costly financing.** We cannot talk about the benefits of leasing without mentioning taxes! Some companies find leasing cheaper than other forms of financing. For example, start-up companies in depressed industries or companies in low tax brackets may lease to claim tax benefits that they might otherwise lose. Depreciation deductions offer no benefit to companies that have little if any taxable income. Through leasing, the leasing companies or financial institutions use these tax benefits. They can then pass some of these tax benefits back to the user of the asset in the form of lower rental payments.

Lessors

Think about the car dealership that is offering a lease arrangement for a new car. Why would the dealership, the lessor, offer the option of leasing a car rather than selling it outright? Leasing can be beneficial for **lessors** as well by:

Leasing often provides profitable interest margins



Leasing can stimulate sales of a lessor's product

1. **Providing profitable interest margins.** Part of the lease payment the lessor receives usually includes an interest revenue component (which we cover later in the chapter).
2. **Stimulating sales of a lessor's product** whether it be from a dealer (lessor) or a manufacturer (lessor). For example, a car dealership can move more cars off the lot by

giving customers the option of leasing, which often provides 100% financing to lessees. Also, in a leasing arrangement, customers might be able to afford a more expensive car than if their only option was a purchase, leading to more profits for the lessor.

Similar to lessees, there can be tax benefits for the lessor

3. **Providing tax benefits** to various parties in the lease, which enhances the return to all the parties involved, including the lessor. Suppose you are starting a business and need a car for business use only. If you purchase a car, you must record depreciation on the car. Depreciation is tax-deductible, but your new business may not have any taxable income in the first year or two of operations, so you would not fully benefit from that tax savings. In certain lease arrangements, if the lessor retains ownership, the lessor will benefit from the depreciation tax deduction and pass along these savings to the lessee in the form of lower lease payments.

   To illustrate the potential tax benefits for the lessor, **Boeing Aircraft** might sell one of its 737 jet planes to a wealthy investor who does not need a plane but could use the tax benefit (tax-deductible depreciation). The investor purchases the plane and then leases it to a foreign airline, for which the tax benefit is of no use. Everyone gains. Boeing sells its airplane, the investor receives the tax benefit, and the foreign airline receives a lower rental rate because the lessor is able to use the tax benefit.

Leasing can provide a high residual value to the lessor upon return of the property

4. **Providing a high residual value to the lessor** upon the return of the property at the end of the lease term. Car lease agreements typically include mileage restrictions on the lessee. Why? Because at the end of a car lease, the car is returned to the dealership. What does the dealership do with the returned leased car? The car will go back on the lot and be sold as a used car. The dealer does not want the car having excessive mileage because that lowers the value of the car, which lowers the selling price and related profits. So, with returned leased cars, the dealership has another opportunity to profit from the same car.

Accounting Matters — Residual Value Regret

Residual value profits are an important driver for the popularity of leasing for lessors, especially for leases of equipment and vehicles. However, the profitability of equipment leasing hinges on a very important estimate: the residual value of the leased asset at the end of the lease. To realize a profit, the lessor must be able to resell the asset when returned by the lessee.

Citigroup at one time estimated that the commercial aircraft it was leasing to the airline industry would have a residual value of 5% of their purchase price. It turned out that they were worth 150% of their cost—a handsome profit. However, automakers haven't fared so well. **Ford** took a $2.1 billion write-down on its lease portfolio when rising gas prices spurred dramatic declines in the resale values of leased trucks and SUVs. Such residual value losses led to **Fiat-Chrysler** to get out of the leasing business altogether.

Not to be outdone, **General Motors (GM)** took advantage of a government subsidy for electric vehicles of $7,500 to help drive down the cost of a lease for its electric car, the Chevy Volt. The taxpayer subsidies along with other GM incentives provided for low monthly lease payments, given the estimated residual value, and led to a full two-thirds of all Volt "sales" being attributed to leases. That's about three times the lease rate for the overall industry. The problems for GM started when the Volts came back at the end of the lease. Unfortunately for GM and other electric car enthusiasts, demand for electric cars without the incentives (which expired) were not sustained, and resale values for Volts plummeted.

As a result, rather than reaping residual value profits, GM sustained losses for the Volt lease returns that sold for less than the original expected residual values. It was a double whammy for GM as the already low sales numbers for new Volts were further hurt by the supply of low-priced Volts on the used car lot. GM is hoping to avoid residual value regret for its recently introduced Bolt model.

Sources: M. Modica, "Chevy Volt Resale Values Plunge as Lease Returns Hit Market," *nlpc.org* (August 7, 2014); and S. Tompor, "Out-of-the-Box Strategy Could Unlock Money on Your Expiring Lease," *Detroit Free Press* (October 21, 2020).

Finance and Operating Leases (Lessee)

Lease Classification

The first step in accounting for leases is to classify the lease arrangement as either finance or operating based on the substance of the leasing transaction:

① If the lease transfers control (or ownership) of the underlying asset to a lessee, then the lease is classified as a **finance lease**.

② In a finance lease, the lessee takes ownership or consumes the substantial portion of the underlying asset over the lease term. Legally, the lessor may retain ownership, but the substance of the transaction is such that the lessee assumes the benefits and risks of ownership.

③ All leases that do not meet any of the finance lease tests are classified as operating leases. In an **operating lease**, a lessee **obtains the right to use the underlying asset** but not ownership of the asset itself.

Underlying Concepts

Leasing transactions must be consistent with the definitions established within the Conceptual Framework.

Asset: A present right of an entity to an economic benefit.

Liability: A present obligation of an entity to transfer an economic benefit.

In either case, **companies capitalize almost all leased assets and liabilities on the balance sheet**. How do companies determine whether to use the finance method or the operating method? From the lessee's perspective, the lease is classified based on whether the arrangement is effectively a purchase of the underlying asset (see **Underlying Concepts**).[1]

The issue of how to report leases is the classic case of substance versus form. In the form of the lease document, legal title may not technically pass from the lessor to the lessee. But in substance, the benefits from the use of the property do transfer to the lessee.

Example 20.1
Lease Classification

FACTS Gammon, Inc. leases one floor of an office building for 5 years to Win Co. At the end of the lease, Win (the lessee) vacates the floor. Gammon (the lessor) can then lease the floor to another tenant.

QUESTION Is this arrangement a finance or operating lease?

SOLUTION

This lease is an operating lease because the lease conveys right-of-use but does not transfer control (or ownership). The lessee controls the leased asset only during the 5-year lease. As we will see, the accounting for a lease classified as a finance lease (transfer of control or ownership) or an operating lease (transfer of right-of-use) reflects differences in control conveyed in a lease arrangement.

Illustration 20.2 presents the **lease classification tests**, which are used to determine whether a company should use the finance lease approach or the operating lease approach.

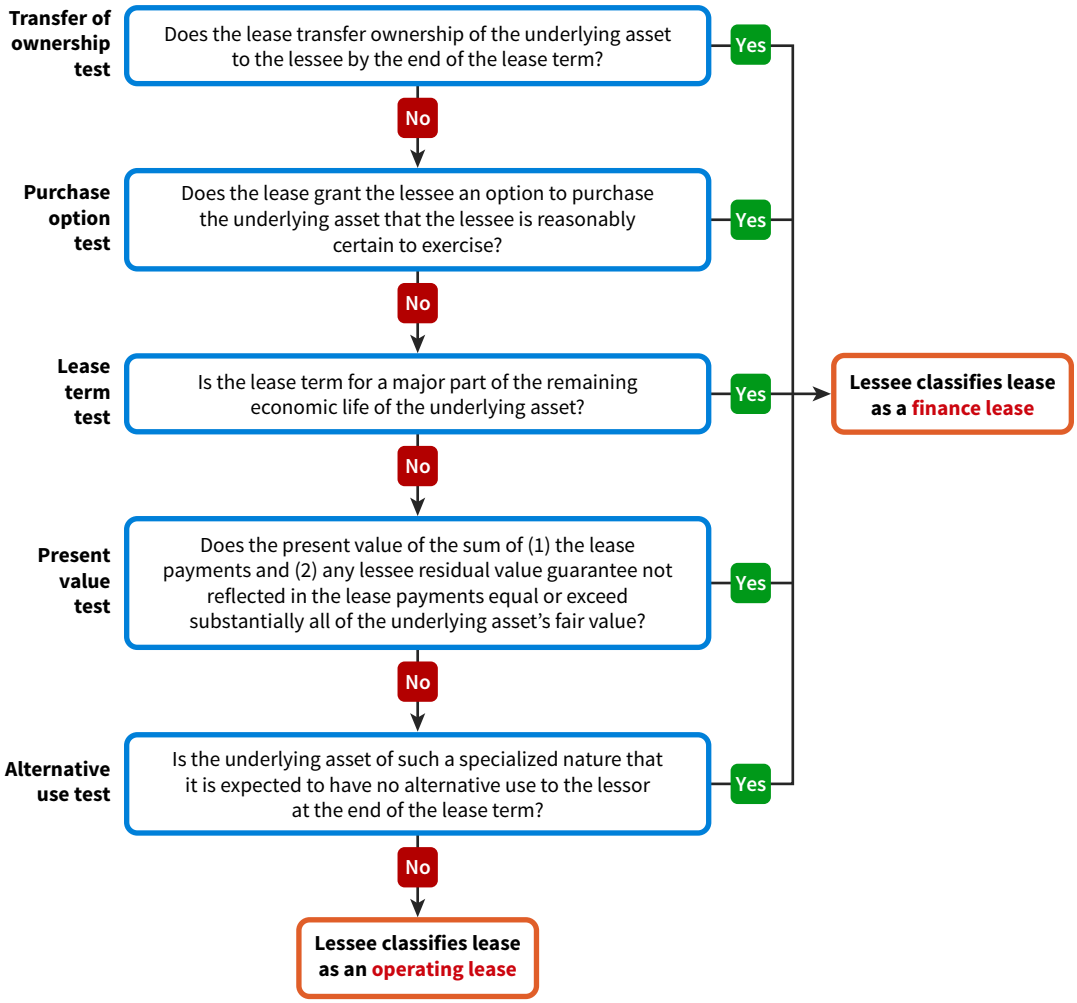
For a lease to be a finance lease, it must be non-cancelable and **meet at least one of the five tests** listed in Illustration 20.2. **[2]** Otherwise, the lease is an operating lease. Additional explanation of each of the lease classification tests follows.

Transfer of Ownership Test

If the lease transfers legal ownership of the asset to the lessee, it is a finance lease. This test is not controversial and easily implemented in practice.

[1]The FASB believes that the reporting of an asset and liability for a lease arrangement is consistent with its conceptual framework definition of assets and liabilities. See "Elements of Financial Statements," *Statement of Financial Accounting Concepts No. 6* (Stamford, Conn.: FASB, December 1985), pp. ix and x.

ILLUSTRATION 20.2 Lease Classification Tests


Transfer of ownership test
Does the lease transfer ownership of the underlying asset to the lessee by the end of the lease term?
Yes
No
Purchase option test
Does the lease grant the lessee an option to purchase the underlying asset that the lessee is reasonably certain to exercise?
Yes
No
Lease term test
Is the lease term for a major part of the remaining economic life of the underlying asset?
Yes
No
Present value test
Does the present value of the sum of (1) the lease payments and (2) any lessee residual value guarantee not reflected in the lease payments equal or exceed substantially all of the underlying asset's fair value?
Yes
No
Alternative use test
Is the underlying asset of such a specialized nature that it is expected to have no alternative use to the lessor at the end of the lease term?
Yes
No
Lessee classifies lease as a finance lease
Lessee classifies lease as an operating lease

Source: Adapted from *KPMG Leases in Depth* (April 2016), p. 147.

Purchase Option Test

A purchase option test is met if it is reasonably certain that the lessee will exercise the option. In other words, the lease purchase option allows the lessee to purchase the property for a price that is significantly lower than the underlying asset's expected fair value at the date the option becomes exercisable. This is called a **bargain purchase option**.

In some leases, it may be very clear that the purchase option is a bargain (some leases offer a $1 purchase option!), but it is not always so clear cut. When applying the lease classification tests at the inception of the lease, management may need to compare the purchase price to an estimate of what the leased asset will be worth at the end of the lease to determine if the purchase option is a **bargain.**

Example 20.2
Bargain Purchase Option

FACTS Brett's Delivery Service leases a **Honda** Accord for $499 per month for 40 months, with an option to purchase the Accord for $1,000 at that end of the lease.

QUESTION The estimated fair value of the Honda Accord is $10,000 at the end of the 40 months. Does the lease have a bargain purchase option?

SOLUTION

The $1,000 option is clearly a bargain purchase option. Therefore, Brett's accounts for this lease as a finance lease.

Lease Term Test

When the lease term is a major part of the remaining economic life of the leased asset, companies should use the finance method in accounting for the lease transaction. The question is, what is a major part of the economic life of a leased asset? Although the FASB indicates that companies should use judgment in evaluating the lease term test, it recognizes that additional implementation guidance would be helpful. As a result, the Board established a guideline that if the lease term is 75% or greater of the economic life of the leased asset, the lease is treated as a finance lease. This is called the **lease term test** (often referred to as the 75% test).[2] *This guideline should be used for homework purposes.*

The lease term is generally considered to be the fixed, non-cancelable term of the lease. What if the lease contains a bargain **renewal** option?

- A **bargain renewal option** allows the lessee to renew the lease for a rental that is lower than the expected fair rental at the time the option becomes exercisable.
- At the commencement of the lease, the difference between the renewal rental and the expected fair rental must be great enough to make exercise of the option to renew reasonably certain, which is a high threshold of probability. The intent is that parties to a lease account for options only when the lessee has a compelling economic reason to exercise an option within the lease. [4] Companies should include in the lease term any renewal periods deemed a **bargain**.

Example 20.3
Bargain Renewal Option

FACTS Assume that **Home Depot** leases **Dell** PCs for 2 years at a rental of $100 per month per computer. In addition, Home Depot can lease these computers for $10 per month per computer for another 2 years.

QUESTION What is the term of this lease?

SOLUTION

The lease clearly offers a bargain renewal option going from a $100 monthly rental rate down to $10; Home Depot should consider the lease term for these computers to be 4 years, not 2 years.

Present Value Test

If the present value of the lease payments is reasonably close to the fair value of the asset, a company is effectively purchasing the asset and should therefore use the finance method to account for the lease. Again, the FASB recognizes that determining what is reasonably close often involves significant judgment and therefore provides an implementation guideline that is referred to as the 90% test. This guideline states that if the present value of the lease payments equals or exceeds 90% of the fair value of the asset, then a lessee should use the finance method to record the lease. *This guideline should be used for homework purposes.* To apply the present value test, a lessee must determine the amount of lease payments and the appropriate discount rate.

Lease Payments The lease payments generally include the following.

1. **Fixed payments.** These are rental payments that are specified in the lease agreement and fixed over the term of the lease. The present value of these payments is used to value the lease liability.

[2]Companies may lease a used asset in the last 25% of its economic life, which raises the question of applying the lease term test for classification of the lease. The FASB's position is that it is inconsistent to require that a lease covering the last few years be recorded as a finance lease by a lessee (or as a sales-type lease by a lessor) when a similar lease of that asset earlier in its economic life would have been classified as an operating lease. This conclusion is debatable because a lessee can direct the use of and obtain substantially all the remaining benefits from a significantly used asset just the same as it can a new or slightly used asset. [3].

2. **Variable payments.** These payments are of two types:
   - Variable payments that are in substance fixed payments because future payments are known.
   - Variable payments that are uncertain in the future. For example, lease agreements may indicate that future payments should be based on an index/rate. When valuing the lease liability in these situations, no increases or decreases to future lease payments should be assumed, based on increases or decreases in the index/rate. Instead, any difference in the payments due to changes in the index or rate is expensed in the period incurred.

   Examples 20.4 and 20.5 provide an analysis of variable lease payments.

Example 20.4
Variable Payments—In Substance Fixed

FACTS On January 1, 2025, Jose Company leases an airplane for 6 years. The annual lease payments are $1,000,000 per year, payable at the beginning of each year (annuity-due basis). In addition, the lease payment increases by $30,000 every year.

QUESTION What are the lease payments in 2026 and 2027?

SOLUTION

On January 1, 2026, the lease payment is $1,030,000 ($1,000,000 + $30,000). On January 1, 2027, the lease payment is $1,060,000 ($1,030,000 + $30,000). Given that the amount of the payments is known from year to year – the base payment plus the annual increase, such payments are considered fixed payments.

While the payments in Example 20.4 vary, the amounts in the future are known at the lease commencement. These payments are included in the present value calculation.

Example 20.5
Variable Lease Payments

FACTS On January 1, 2025, Jose Company leases an airplane for 6 years. The annual lease payments are $1,000,000 per year, payable at the beginning of each year (annuity-due basis). In addition, assume that the lease payments are adjusted each year by a change in the Consumer Price Index (CPI).

QUESTION Assume the CPI is 100 at January 1, 2025, and increases to 104 on January 1, 2026. What is the payment on January 1, 2026?

SOLUTION

The variable payment on January 1, 2026, is $1,040,000 ($1,000,000 × 1.04). Because the amount of the variable payment from year to year is not known at the start of the lease, this payment is not included in determining the present value of the lease liability at January 1, 2025. This additional payment ($40,000) is recognized as an expense in the period it is incurred (2026). Similarly, when lease payments vary with a performance measure (e.g., sales at a store location, asset usage), the variable amounts will be expensed in the period incurred.

3. **Amounts guaranteed by a lessee under a residual value guarantee.** **Residual value** is the expected value of the leased asset at the end of the lease term. A residual value can be guaranteed or unguaranteed. For lease classification purposes, we **include** the guaranteed residual and ignore any unguaranteed residual.
   - In a **guaranteed residual value**, the lessee has an obligation to not only return the leased asset at the end of the lease term but also to guarantee that the residual value will be a certain amount. For **classification purposes**, the lessee includes the full amount of the residual value guarantee at the end of the lease term in the present value test. This treatment of the guaranteed residual value is only for classification purposes. When calculating the lease liability, we will see that the lessee should only include any expected future payment, better aligning with the definition of a liability.

- If the lease involves an **unguaranteed residual value**, the lessee does not have any obligation to the lessor at the end of the lease, except to return the leased asset to the lessor. **[5]** The lessee does not consider unguaranteed residual value as part of the present value test.

4. **Payments related to purchase or termination options that the lessee is reasonably certain to exercise.** As indicated earlier, if the lease contains a bargain purchase option, the cost of that option should be considered part of the lease payments.

Example 20.6
Termination Option

FACTS Cabrera Company leases a building and land from Worldwide Leasing for 6 years with monthly payments of $10,000. The lease contract allows Cabrera to terminate the lease after 2 years for a total payment of $140,000. At the start of the lease, it is reasonably certain that Cabrera will not continue the lease beyond 2 years.

QUESTION What are Cabrera's lease payments?

SOLUTION

In this case, Cabrera should include the cost of the termination option in its calculation of the present value of its lease liability. The total lease payments are therefore $380,000 [($10,000 × 24 months) + $140,000].

Discount Rate Let's now discuss the interest rate that is used in determining the present value of the lease payments needed for the 90% test. You have learned from previous chapters that interest is a component of all types of long-term financing agreements, such as notes receivable and payable, bonds payable, debt investments, and pensions. Interest represents a payment for the use of money. Lease arrangements are no different because they are essentially a long-term financing agreement between the lessor and the lessee.

To determine whether the present value of the payments equals or exceeds 90% of the fair value of the leased asset, a lessee must discount the lease payments back to their present value using a reasonable interest rate.

- Ideally, the lessee will use the **implicit interest rate** set by the lessor. **[6]** This rate is defined as the discount rate that, at commencement of the lease, causes the aggregate present value of the lease payments and unguaranteed residual value to be equal to the fair value of the leased asset. **[7]** What if it is impracticable for a lessee to determine the implicit rate of the lessor?
- In the event that it is impracticable to determine the implicit rate, the lessee uses its incremental borrowing rate. The **incremental borrowing rate** is the rate of interest the lessee would have to pay on a similar lease or the rate that, at commencement of the lease, the lessee would incur to borrow over a similar term the funds necessary to purchase the asset.

The implicit rate of the lessor is generally a more realistic rate to use in determining the amount to report as the asset and related liability. However, given the difficulty the lessee may have in determining the implicit rate, it is likely that the lessee will use the incremental borrowing rate. This difficulty arises because the lessee may not know the residual value used by the lessor, nor the initial direct costs that the lessor incurs.

Alternative Use Test

If at the end of the lease term the lessor does not have an alternative use for the asset, the lessee classifies the lease as a finance lease. In this situation, the assumption is that the lessee uses all the benefits from the leased asset and therefore the lessee has essentially purchased the asset. In some cases, lessors will build an asset to meet specifications set by the lessee (referred to as "build-to-suit" arrangements).

Example 20.7
Alternative Use Test

FACTS Assume that Hale Construction (an equipment manufacturer) builds and leases hydraulic lifts to meet unique loading dock configurations of **Amazon**, the lessee.

QUESTION Does the lease arrangement between Hale and Amazon meet the alternative use test? Explain why or why not.

SOLUTION

Given the specialty nature of the equipment, only Amazon can use the lifts. Because Amazon receives substantially all of the benefits of the leased asset, the lease meets the alternative use test.

Put It into Practice LO 20.1
Determine Lease Classifications

FACTS Morgan Bakeries is involved in three different lease situations. Each of these leases is non-cancelable, and in no case does Morgan receive title to the properties leased during or at the end of the lease term. All leases start on January 1, 2025, with the first rental due at the beginning of the year. For each lease, assume that the lessors have an alternative use for the assets at the end of the lease unless ownership transfers to the lessee. Additional information is shown in the following table (where FV is fair value, RV is residual value, and PV is present value).

	(a) Harmon, Inc.	(b) Mendota Truck Co.	(c) Appleland Computer
Type of property	Cabinets	Truck	Computer
Yearly rental	$6,000	$5,189.31	$2,640.35
Lease term (years)	20	3	3
Estimated economic life	30	4	5
Purchase option	$35,000 at end of 20 years (FV)	None	$100 at end of 3 years
Renewal option	None	1 year at $1,500; no penalty for nonrenewal; standard renewal clause	None
FV at commencement	$75,000	$20,000	$10,000
RV—Guaranteed	–0–	$7,000 (the amount expected to be paid; PV = $5,556.81)	–0–
RV—Unguaranteed	$35,000	–0–	$3,000
PV of payments			
Using incremental borrowing rate (8%)	$63,621.60	$20,000	$7,618.51
Using implicit rate	Not known	Not known	Known by lessee (6%), $7,565.10
FV at end of lease	$35,000	Not available	$3,000

INSTRUCTIONS

For each lease arrangement, determine the correct classification of the lease for Morgan, the lessee.

SOLUTION

a. Analysis of the Harmon, Inc. lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** No.
3. **Economic life test (75% test):** The lease term is 20 years and the estimated economic life is 30 years. Thus, it **does not** meet the 75% test.

4. **Present value test (90% test):** No; the present value of the rental payments of $63,621,60 is less than 90% of the fair value of the underlying asset as shown below.

Fair value	$75,000	Rental payments	$ 6,000
Rate	× .90	PV of annuity due for 20 years at 8%	× 10.60360
90% of fair value	$67,500	PV of rental payments	$63,621.60

None of the lease classification tests are met, so both Morgan and Harmon should account for this lease as an **operating** lease.

b. Analysis of the Mendota Truck Co. lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** No.
3. **Economic life test (75% test):** The lease term is 3 years and the estimated economic life is 4 years. Thus, it **does** meet the 75% test (3 ÷ 4 = 75%).
4. **Present value test (90% test):**

Fair value	$20,000	Rental payments	$ 5,189.31
Rate	× .90	PV of annuity due for 3 years at 8%	× 2.78326
90% of fair value	$18,000	PV of rental payments	$14,443.19*

*Adjusted for $0.01 due to rounding.

PV of guaranteed residual value = $7,000 × ($PVF_{3,8\%}$) = $7,000 × .79383 = $5,556.81

PV of rental payments	$14,443.19
PV of guaranteed residual value	5,556.81
PV of lease payments	$20,000.00

The terms of this lease meet two of the lease classification tests; the lease term is 75% of the economic life of the leased asset and the present value of the lease payments are greater than 90% of the fair value of the lease. Morgan and Mendota would account for this lease as a finance lease. A few things to note (1) We did not incorporate the renewal clause into our lease term, leaving the lease term at the original 3-years. Because the option was for a "standard renewal," this **would not be considered a bargain renewal.** We did incorporate the guaranteed residual value when completing the 90% fair value test, because Morgan guarantees the $7,000 residual payment.

c. Analysis of the Appleland Computer lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** Yes. The $100 purchase option is clearly a **bargain** when compared to the $3,000 estimated fair value at the end of the lease term, so Morgan would be reasonably certain to exercise the option.
3. **Economic life test (75% test)**: The lease term is 3 years, and no bargain renewal period exists as it is simply a standard renewal clause which is not reasonably certain to be exercised. Therefore, the 75% test is not met (3 ÷ 5 = 60%).
4. **Recovery of investment test (90% test)**:

Fair value	$10,000	Rental payments		$2,640.35
Rate	× .90	PV of annuity-due factor for 3 years at 6%		× 2.83339
90% of fair value	$ 9,000	PV of lease payments		7,481.14
		Bargain purchase option	$ 100	
		PV of $1 factor for 3 years at 6%	× .83962	83.96
		PV of lease payments using implicit borrowing rate		$7,565.10

The present value of the payments is $7,565.10, which is lower than 90% of the fair value. The lease does **not** meet the present value test.

This lease meets the bargain purchase option test such that Morgan and Appleland will account for the lease as a finance lease. The $100 purchase option is clearly a **bargain** when compared to the $3,000 estimated fair value at the end of the lease term, so Morgan would be reasonably certain to exercise the option. Morgan was aware of the lessor's implicit rate used in determining the lease payments of 6%, so instead of using their incremental borrowing rate, Morgan will use the 6% rate for the present value test. Note that the present value of the lease payments includes the purchase payment, as it is a bargain.

20.2 Accounting for Finance Leases

LEARNING OBJECTIVE 2

Explain the accounting for finance leases.

As indicated, the accounting for a lease arrangement by lessees and lessors depends on classification of the lease as a finance or operating lease.

Lessee Accounting for Finance Leases: An Example

To illustrate the accounting for a finance lease, assume that **Coffee & Beans Equipment, Inc.** and **Starbucks** sign a lease agreement dated January 1, 2025, that calls for Coffee & Beans to lease a commercial-grade coffee bean roaster to Starbucks beginning January 1, 2025. The terms and provisions of the non-cancelable lease agreement and other pertinent data are as follows.

- Lease term: 5 years with no renewal options
- Rental payments (beginning of each year): $20,711.11
- Leased asset (bean roaster):
  - Fair value at commencement of lease: $100,000
  - Estimated economic life: 5 years
  - Residual value (guaranteed): $5,000
  - Starbucks expects that it is probable that the expected value of the residual value at the end of the lease will be greater than the guaranteed amount of $5,000
- The equipment reverts to Coffee & Beans at the termination of the lease.
- Starbuck's incremental borrowing rate is 5% per year.
- Starbucks depreciates, on a straight-line basis, similar equipment that it owns.
- Coffee & Beans sets the annual rental rate to earn a rate of return of 4% per year; Starbucks is aware of this rate.

Starbucks evaluates the lease classification tests as indicated in Illustration 20.3.

ILLUSTRATION 20.3 Lease Classification Tests

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Coffee & Beans at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is equal to the economic life of the asset (100%). Therefore, **the lease meets the lease term test.**
4. Present value test	The present value of the lease payments is $100,000*, which is 100% (greater than or equal to 90%) of the fair value of the roaster. Therefore, **the lease meets the present value test**.
5. Alternative use test	Since the asset is returned to Coffee & Beans with some residual value, the alternative use test is not met.

Excel Solution

r	4%
n	5
PMT	–$20,711.11
FV	–$5,000.00
Type	1
PV	$100,000

PV(rate, nper, pmt, [fv], [type])

*Present value of payments ($20,711.11 × 4.62990(*PVF-AD*$_{5,4\%}$))	$ 95,890.35[3]
Present value of the residual value ($5,000 × .82193(*PVF*$_{5,4\%}$))	4,109.65
	$100,000.00

[3]The computation of the present value is rounded by $0.02. The rounding occurs because the tables from Chapter 5 are used to determine the amounts shown. *For homework and other computations in the text, we use the tables, which may lead to small rounding differences*. In practice, an Excel worksheet or a financial calculator is often used to avoid these rounding differences.

Thus, the lease is classified as a finance lease due to meeting the lease term and present value tests (meeting either one of these tests would suffice). Note that the **present value test** includes the full amount of the guaranteed residual value to determine whether the lease is classified as a financing or operating lease. However, for measurement of the lease liability, Starbucks includes **only the expected residual value probable of being owed under the residual value guarantee.** [8] Because Starbucks believes that it is probable that the expected residual value will be greater than the guaranteed residual value, the guaranteed residual value is not included in the measurement of the lease liability (see **Underlying Concepts**). (We discuss this further later in the chapter.)

Starbucks computes the lease liability and the amount capitalized as a right-of-use asset as the present value of the lease payments, as shown in **Illustration 20.4**.

Underlying Concepts

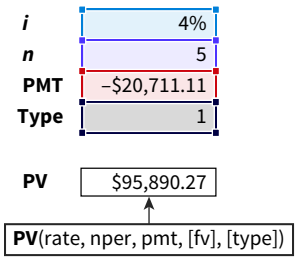
Recall from our earlier discussion the definition of **liabilities** as probable future sacrifices of economic benefits. If Starbucks does not expect any payout related to the guaranteed residual value, it is reasonable to exclude that amount from the calculation of the liability.

ILLUSTRATION 20.4 Present Value of Lease Payments

Capitalized amount = $20,711.11 × Present value of an annuity due of 1 for 5 periods at 4%
= $20,711.11 × 4.62990 ($PVF\text{-}OA_{5,4\%}$)
= $95,890.35*

*Rounded by $0.02.

Excel Solution



You might be asking why Starbucks uses Coffee & Beans' implicit interest rate of 4% instead of its incremental borrowing rate of 5%? This is because the implicit rate is known to Starbucks. If Starbucks had not known Coffee & Beans' implicit rate, it would have used its own incremental borrowing rate of 5% to compute the present value of the lease liability. On the date the lease is signed, Starbucks records the lease on its books as follows.

January 1, 2025

Right-of-Use Asset	95,890.35	
Lease Liability		95,890.35

Note that Starbucks records the obligation at the net amount of $95,890.35 (the present value of the lease payments) rather than at the gross amount of $103,555.55 ($20,711.11 × 5).

Why are we ignoring the **guaranteed** residual value? Because Starbucks expects the value of the leased asset to be greater than the amount guaranteed, there is no expected end-of-lease payment, so we should not include it in the liability or asset. On the date the lease is signed, Starbucks records the **first lease payment** as follows.

January 1, 2025

Lease Liability	20,711.11	
Cash		20,711.11

What about interest? The first payment comes at the start of the lease term; because no time has passed, there is no interest in the first payment. Each subsequent payment does, however, include an interest component. We will calculate interest using the effective-interest method. Under this method, interest expense a function of the outstanding liability, as shown in the lease amortization schedule in **Illustration 20.5**.

ILLUSTRATION 20.5 Lease Amortization Schedule

Starbucks
Lease Amortization schedule
Annuity-Due Basis

Date	Annual Lease Payment	Interest (4%) on Lease Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/25				$95,890.35
1/1/25	$ 20,711.11	$ –0–	$20,711.11	75,179.24
1/1/26	20,711.11	3,007.17	17,703.94	57,475.30
1/1/27	20,711.11	2,299.01	18,412.10	39,063.20
1/1/28	20,711.11	1,562.53	19,148.58	19,914.62
1/1/29	20,711.11	796.49*	19,914.62	0.00
	$103,555.55	$7,665.20	$95,890.35	

(a) Lease payment as required by lease.
(b) Four percent of the preceding balance of (d) except for 1/1/25; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.09.

Note that as the liability balance reduces over the life of the lease, the amount of related interest expense goes down as well. Each subsequent lease payment (after the first payment at the commencement of the lease) of $20,711.11 consists of two elements: (1) a reduction of the lease liability and (2) a financing cost (interest expense). The total financing cost (interest expense) over the term of the lease is $7,665.20. This amount is the difference between the present value of the lease payments ($95,890.35) and the actual cash disbursed ($103,555.55). At year-end, Starbucks records **interest expense** for the first year of the lease as follows.

December 31, 2025

Interest Expense	3,007.17	
Lease Liability		3,007.17

Why is Starbucks increasing the lease liability? This is simply a function of timing. The company must record interest expense on the 2025 year-end financial statements, even though the next lease payment is not due until January 1, 2026. When Starbucks makes its next lease (cash) payment, it will remove this liability.

Before we move to Starbucks's 2026 lease payment, we must consider the right-of-use asset. As you know, we use depreciation to allocate the cost of long-term property, plant, and equipment onto the income statement. We will employ a similar process with the right-of-use asset by amortizing it over the five-year lease term. Note that we use amortization expense because a right-of-use asset in considered an intangible asset. Applying Starbucks's normal amortization policy (straight-line method) results in the following entry at December 31, 2025.

December 31, 2025

Amortization Expense	19,178.07	
Right-of-Use Asset ($95,890.35 ÷ 5)		19,178.07

At December 31, 2025, Starbucks reports right-of-use assets and related lease liabilities separately from other assets and liabilities on its balance sheet or discloses these assets and liabilities in the notes to its financial statements. Starbucks classifies the portion of the liability due within one year or the operating cycle, whichever is longer, with current liabilities, and the rest with noncurrent liabilities.

For example, the current portion of the December 31, 2025, total obligation of $75,179.24 in Starbucks's amortization schedule is the amount payable in 2026, or $20,711.11. Note that this current portion is composed of two components: (1) accrued interest on the liability outstanding throughout the year ($3,007.17) and (2) reduction of the initial lease liability ($17,703.94). **Illustration 20.6** shows the presentation of the lease assets and liabilities

sections as they relate to lease transactions at December 31, 2025, assuming Starbucks chose to present right-of-use assets and lease liabilities separately from other assets and liabilities on the balance sheet.

ILLUSTRATION 20.6 Balance Sheet Presentation

Noncurrent assets	
Right-of-use assets ($95,890.35 − $19,178.07)	$76,712.28
Current liabilities	
Lease liability ($3,007.17 + $17,703.94)	$20,711.11
Noncurrent liabilities	
Lease liability	57,475.30

On its December 31, 2025, income statement, Starbucks reports interest expense on the liability and amortization expense related to right-of-use assets, as shown in **Illustration 20.7**.

ILLUSTRATION 20.7 Income Statement Presentation

Expenses	
Interest expense (lease liabilities)	$ 3,007.17
Amortization expense (right-of-use assets)	19,178.07

On January 1, 2026, Starbucks records the second lease payment as follows.

January 1, 2026

Lease Liability ($3,007.17 + $17,703.94)	20,711.11	
Cash		20,711.11

No interest expense is recorded in the entry because the interest expense was recognized in 2025, and interest for 2026 has not yet occurred.

Entries through 2029 follow the pattern above. **Upon expiration of the lease**, Starbucks has fully amortized the amount of the right-of-use asset. It also has fully discharged its lease obligation. At the date the lease expires, both the right-of-use asset account and lease liability account related to Starbucks's lease of the bean roaster have zero balances. If Starbucks does not purchase the bean roaster, it returns the equipment to Coffee & Beans.[4]

What if Starbucks purchases the equipment from Coffee & Beans? If the purchase takes place at the termination of the lease at a price of $5,000, Starbucks will make the following entry.

January 1, 2030

Equipment	5,000	
Cash		5,000

Starbucks will continue to depreciate the equipment using the straight-line method for the remaining useful life.

Lessor Accounting for Sales-Type (Finance) Leases

We now turn our attention to the other party involved in the Coffee & Beans/Starbucks lease arrangement—Coffee & Beans (the lessor). The **lease classification tests for the lessor are identical to the tests used by the lessee** to determine classification of a lease as a

[4]If **Starbucks** purchases the bean roaster during the term of the lease, it accounts for the transaction as a termination of the lease and a purchase of an asset. Thus, it would record any difference between the purchase price and the carrying amount of the lease liability as an adjustment of the carrying amount of the asset. **[9]**

finance or operating lease, as shown in Illustration 20.3. Why use the same criteria for both the lessee and the lessor? The reason is that the tests are used to determine whether the lessee and the lessor have an agreement to transfer control of the asset from one party to the other. If the lessee receives control, then the lessor must have given up control.

The FASB concluded that by meeting any of the lease classification tests in Illustration 20.3, the lessor transfers control of the leased asset and therefore satisfies a performance obligation. [10] Remember that term from Chapter 17? That's right, when we consider the lessor perspective, we have to consider the revenue recognition principle.

- If the lease meets one of the lease classification tests, the lessor has, in substance, transferred control of the right-of-use asset. It therefore has a **sales-type lease** if the lessee takes ownership or consumes a substantial portion of the underlying asset over the lease term.[5]
- If the lease does not transfer control (and ownership) of the asset over the lease term, the lessor will generally use the operating approach in accounting for the lease. [11]

A word of caution: Although not part of the classification tests, the lessor must also determine whether the collectibility of payments from the lessee is probable. If payments are not probable, the lessor does not record a receivable and does not derecognize the leased asset. Instead, receipt of any lease payments is recorded as a deposit liability. [12][6]

Accounting Matters — Who Are the Lessors?

We gave examples of companies on the lessee side earlier in the chapter, but who are the lessors? You may be surprised to learn that banks are the largest players in the leasing business, followed by captive leasing companies, whose primary business is to perform leasing for a parent company (**Ford Motor Credit**, for example). **JPMorgan Chase** provides auto and equipment lease financing to its customers through mostly operating leases. As the following tables show, the underlying leased assets are reported on JPMorgan Chase's balance sheet as other assets, and the company continues to depreciate these assets while recording lease income.

	December 31,	
(in millions)	2019	2018
Carrying value of assets subject to operating leases, net of accumulated depreciation	$23,587	$21,428
Accumulated depreciation	6,121	5,303

	Year Ended December 31,		
(in millions)	2019	2018	2017
Operating lease income	$5,455	$4,540	$3,611
Depreciation expense	4,157	3,522	2,808

Source: JPMorgan Chase 10-K.

Accounting Measurement and Presentation

Classification of the lease as either a sales-type or operating lease determines the subsequent accounting by the lessor. For a sales-type lease, the lessor accounts for the lease in a manner similar to the sale of inventory. The lessor will record revenue and a related receivable, and will record cost of goods sold and a decrease in inventory. The **lease receivable** for Starbucks is computed as follows.

Lease Receivable = Present Value of Rental Payments + Present Value of Guaranteed and Unguaranteed Residual Values

[5]We call it a sales-type lease because there is another type of lease for a lessor that uses the finance method, called a "direct financing lease." Direct financing leases are not that common in practice; we discuss this exception in Appendix 20B.

[6]If classified as an operating lease and collectibility is not probable, recognition of lease income is limited to cash received.

Note that the lessor includes the residual value in their lease receivable, regardless of whether or not it is guaranteed. Why? If the leased asset reverts back to the lessor at the end of the lease, the lessor must estimate the value at which the asset will come onto their balance sheet.[7] As we will see in the following example:

- Any selling profit on the transfer of the leased asset is recognized by recording sales revenue and related cost of goods sold at the commencement of the lease. The lessor recognizes interest revenue on the lease receivable over the life of the lease using the effective-interest method.
- Even if the selling profit is zero (or a net loss), the lessor recognizes sales and cost of goods sold.
- For leases classified as operating, the lessor continues to recognize the asset on its books and records lease revenue for payments received from the lessee over the lease term.

Sales-Type (Finance) Lease Example

To illustrate lessor accounting for a sales-type lease, refer to the preceding Coffee & Beans/ Starbucks example. We repeat here the information relevant to Coffee & Beans in accounting for this lease transaction.

- Lease term: 5 years with no renewal options
- Rental payments (beginning of each year): $20,711.11
- Leased asset (bean roaster):
  - Fair value at commencement of lease: $100,000
  - The cost of the underlying asset on Coffee & Beans's balance sheet is $85,000
  - Estimated economic life: 5 years
  - Residual value (guaranteed): $5,000
  - Starbucks expects that it is probable that the expected value of the residual value at the end of the lease will be greater than the guaranteed amount of $5,000
- The bean roaster reverts to Coffee & Beans at the termination of the lease.
- Collectibility of payments by Coffee & Beans is probable.
- Coffee & Beans sets the annual rental payment to earn a rate of return of 4% per year (implicit rate) on its investment, as shown in **Illustration 20.8**.

Fair value of leased equipment	$100,000.00
Less: Present value of the residual value ($5,000 × .82193($PVF_{5,4\%}$))	4,109.65
Amount to be recovered by lessor through lease payments	$ 95,890.35
Five beginning-of-year lease payments to earn a 4% return ($95,890.35 ÷ 4.62990($PVF\text{-}AD_{5,4\%}$))	$ 20,711.11

ILLUSTRATION 20.8 Lease Payment Calculation

How do you think lessors, like Coffee & Beans, come up with their lease payments? They consider what would be an acceptable return on their investment to allow a lessee the "right to use" their leased asset! Lessors will consider their own cost of capital and the credit standing of the lessee to set an acceptable rate of return.

What about residual value? Not only will lessors factor in their estimate of what a leased asset will be worth at the end of the lease term, but they will also consider whether that residual value is guaranteed by the lessee or not. A guaranteed residual value may result in a lower rental payment for the lessee.

[7]Lease Receivable is often defined as only the present value of the rental payments plus the present value of the guaranteed residual value. In the case in which the lessor has an unguaranteed residual value, the total amount is often referred to as the **net investment** in the lease. Another approach is to report the unguaranteed residual value separately when making the journal entry. *We use the definition shown in the formula for pedagogical reasons; this definition (including both guaranteed and unguaranteed residual values) should be used in the homework.*

The lease meets the criteria for classification as a finance (sales-type) lease because (1) the present value of the lease payments is equal to the fair value of the asset, and (2) the lease term is equal to the economic life of the asset. That is, Starbucks will consume substantially the entire underlying asset over the lease term. Coffee & Beans computes the lease receivable as shown in **Illustration 20.9**.

ILLUSTRATION 20.9 Lease Receivable Calculation

Lease receivable = Present value of the rental payment + Present value of the guaranteed residual value
= $95,890.35 ($20,711.11 × 4.62990($PVF\text{-}OA_{5,4\%}$)) + $4,109.65 ($5,000.00 × .82193 ($PVF_{5,4\%}$))
= $100,000.00

Knowing that Coffee & Beans set the lease payments to cover their investment in the asset of $100,000 less the estimated residual value, the lease receivable must equal $100,000.

Coffee & Beans then records the lease receivable, cost of goods sold, and sales revenue, and removes the leased asset from Coffee & Beans' inventory. The journal entry to record this transaction on January 1, 2025, is as follows.

January 1, 2025

Lease Receivable	100,000	
Cost of Goods Sold	85,000	
Sales Revenue		100,000
Inventory		85,000

As a result, Coffee & Beans reports a gross profit of $15,000 ($100,000 − $85,000) on its income statement. Coffee & Beans then prepares a lease amortization schedule, as shown in **Illustration 20.10**, applying the effective-interest method and recognizing interest revenue as a function of the lease receivable balance.

ILLUSTRATION 20.10 Lease Amortization Schedule

Coffee & Beans
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment (a)	Interest (4%) on Lease Receivable (b)	Reduction of Lease Receivable (c)	Lease Receivable (d)
1/1/25				$100,000.00
1/1/25	$ 20,711.11	$ –0–	$ 20,711.11	79,288.89
1/1/26	20,711.11	3,171.56	17,539.55	61,749.34
1/1/27	20,711.11	2,469.97	18,241.14	43,508.20
1/1/28	20,711.11	1,740.33	18,970.78	24,537.42
1/1/29	20,711.11	981.50	19,729.61	4,807.81
1/1/30	5,000.00	192.19*	4,807.81	0.00
	$108,555.55	$8,555.55	$100,000.00	

(a) Lease payment as required by lease.
(b) Four percent of the preceding balance of (d) except for 1/1/25; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.12.

Also, on January 1, 2025, Coffee & Beans records receipt of the first year's lease payment as follows.

January 1, 2025

Cash	20,711.11	
Lease Receivable		20,711.11

On December 31, 2025, Coffee & Beans recognizes the interest revenue on the lease receivable during the first year through the following entry (see **Underlying Concepts**).

December 31, 2025

Lease Receivable	3,171.56	
Interest Revenue		3,171.56

Similar to what we saw on the lessee side, we increase the lease receivable by the amount of accrued interest as of December 31, 2025. When Coffee & Beans receives the lease payment in January, it will remove this receivable. At December 31, 2025, Coffee & Beans reports the lease receivable in its balance sheet among current assets and noncurrent assets. It classifies the portion due within one year or the operating cycle, whichever is longer, as a current asset, and the rest with noncurrent assets.

Illustration 20.11 shows Coffee & Beans' assets section as it relates to the Starbucks lease transactions at December 31, 2025.

Underlying Concepts

Will the interest revenue recorded by the lessor be the same as the interest expense recorded by the lessee? Not necessarily! Discount rates used and residual value guarantees may cause the lease receivable and lease payable to be different. The cash lease payment will be the same between the lessor and lessee, but the remainder of lease payment journal entries could be different!

ILLUSTRATION 20.11 Balance Sheet Presentation

Current assets	
Lease receivable ($3,171.56 + $17,539.55)	$20,711.11
Noncurrent assets (investments)	
Lease receivable	61,749.34

In its income statement for 2025, Coffee & Beans presents the revenue and expense items shown in **Illustration 20.12**.

ILLUSTRATION 20.12 Income Statement Presentation

Sales	
Sales revenue	$100,000.00
Less: Cost of goods sold	85,000.00
Other revenue	
Interest revenue	3,171.56

The following entries record receipt of the second year's lease payment and recognition of the interest revenue in 2026.

January 1, 2026

Cash	20,711.11	
Lease Receivable		20,711.11

December 31, 2026

Lease Receivable	2,469.97	
Interest Revenue		2,469.97

Journal entries through 2029 follow the same pattern, except for the year 2029. In 2029, the final lease payment is made on January 1, 2029, but the asset is not returned to Coffee & Beans until January 1, 2030.

Coffee & Beans makes the following entry on December 31, 2029.

December 31, 2029

Lease Receivable	192.19	
Interest Revenue		192.19

Interest revenue of $192.19 is recognized for the year 2029 as the residual value accumulates up to $5,000 at the end of the lease. At January 1, 2030, when the leased asset is returned to Coffee & Beans, the Lease Receivable account is reduced to zero and the asset is returned to inventory, as follows.

January 1, 2030

Inventory	5,000	
Lease Receivable		5,000

Put It into Practice LO 20.2

Account for Sales-Type (Finance) Lease

FACTS Parker Shipping Co. (lessee) leases a standard hydraulic lift from Stoughton Trailers Inc. (the lessor) that will be installed at one of Parker's loading docks. The lease, signed on January 1, 2025, specifies that Stoughton grants right-of-use of the lift to Parker under the following terms:

- The lease agreement is non-cancelable with a term of four years, requiring equal rental payments of $11,182.24 at the beginning of each year of the lease (annuity-due basis).
- The lift has a fair value at commencement of the lease of $40,000, an **estimated economic life of four years, and no residual value**. The cost of the lift on Stoughton's books is $30,000.
- The lease contains no renewal options. The lift reverts to Stoughton at the termination of the lease.
- The implicit rate of the lessor is 8% and is known by Parker. Stoughton sets the annual rental as shown in the following calculation.

Fair value of leased equipment	$40,000.00
Less: Present value of the residual value	0.00
Amount to be recovered by lessor through lease payments	$40,000.00
Four beginning-of-year lease payments to earn an 8% return ($40,000 ÷ 3.57710 ($PVF\text{-}AD_{4,8\%}$))	$11,182.24

INSTRUCTIONS

a. Determine the classification of this lease arrangement for Parker (lessee) and Stoughton (lessor).

b. Prepare the amortization schedule for the lease liability (receivable) for Parker (Stoughton).

c. Prepare the entries and show the financial statement presentation of the lease arrangement throughout the lease term.

SOLUTION

a. The lease is classified as a finance/sales-type lease by Parker/Stoughton, as indicated by the following analysis.

Test	Assessment
1. Transfer of ownership test	**No.** Transfer of ownership does not occur; the asset reverts to Stoughton at the end of the lease.
2. Purchase option test	**No.** There is no bargain purchase option in the lease.
3. Lease term test	**Yes.** 4 year lease term / 4 year useful life = 100% (greater than the suggested threshold of 75%)
4. Present value test	**Yes.** Present value of lease payments = $11,182.24 × 3.57710 ($PVF\text{-}AD_{4,8\%}$) = $40,000.00 / $40,000 fair value of equipment = 100% (greater than the suggested threshold of 90%)
5. Alternative use test	**Yes.** As indicated, the hydraulic lift will be completely used up at the end of the lease; it will be of no use to Stoughton at the end of the lease. Therefore, the lease meets the alternative use test.

Thus, the lease is classified as a finance/sales-type lease due to meeting the lease term, present value, and alternative use tests (remember, you only need to meet **one** of the classification tests to record the lease as a finance/sales-type lease). Note that when we calculate the present value test, we are comparing the present value of the lease payments to the **fair value** of the leased item, not the cost. The cost of the asset is relevant when we record the lessor journal entries.

b. The accounting for the lease liability (Parker) and lease receivable (Stoughton) is based on the amounts reported in the following amortization schedule.

Parker Shipping /Stoughton Trailers
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment (a)	Interest (8%) on Liability/ Receivable (b)	Reduction of Lease Liability/ Receivable (c)	Lease Liability/ Receivable (d)
1/1/25				$40,000.00
1/1/25	$11,182.24	$ –	$11,182.24	28,817.76
1/1/26	11,182.24	2,305.42	8,876.82	19,940.94
1/1/27	11,182.24	1,595.28	9,586.96	10,353.98
1/1/28	11.182.24	828.26*	10,353.98	0.00
	$44.728.96	$4,728.96	$40,000.00	

(a) Lease payment as required by lease.
(b) 8% of the preceding balance of (d) except for 1/1/25; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.06.

We are using the same amortization schedule for both the lessee and the lessor; can we always do this? Not necessarily. In this example, there is no residual value, and the lessee knows the implicit rate used by the lessor in setting the payments, so the lease liability and receivable are the same. If there was an unguaranteed residual value or if the lessee did not know the implicit rate of the lessor, the lease liability and receivable would be different, resulting in different amortization schedules.

c. Entries and financial statement presentation for Parker (lessee) and Stoughton (lessor) over the life of the lease are as follows, based on the amounts reported in the amortization schedule.

Parker Shipping (Lessee)			Stoughton Trailers (Lessor)		
Lease commencement/first payment (January 1, 2025):					
Right-of-Use Asset	40,000.00		Lease Receivable	40,000.00	
Lease Liability		40,000.00	Cost of Goods Sold	30,000.00	
			Inventory		30,000.00
			Sales Revenue		40,000.00
Lease Liability	11,182.24		Cash	11,182.24	
Cash		11,182.24	Lease Receivable		11,182.24
Interest accrual and amortization expense (December 31, 2025):					
Interest Expense	2,305.42		Lease Receivable	2,305.42	
Lease Liability		2,305.42	Interest Revenue		2,305.42
Amortization Expense	10,000.00				
Right-of-Use Asset ($40,000 ÷ 4 years)		10,000.00	No entry		

Balance Sheet		Income Statement	
Noncurrent assets		Interest expense	$2,305.42
Right-of-use assets	$30,000.00	Amortization expense	10,000.00
Current liabilities			
Lease liability	$11,182.24		
Noncurrent liabilities			
Lease liability	19,940.94		

Balance Sheet		Income Statement	
Current assets		Sales revenue	$40,000.00
Lease receivable	$11,182.24	Cost of goods sold	30,000.00
Noncurrent assets			
Lease receivable	19,940.94	Interest revenue	2,305.42

Second lease payment (January 1, 2026):					
Lease Liability ($8,876.82 + $2,305.42)	11,182.24		Cash	11,182.24	
Cash		11,182.24	Lease Receivable		11,182.24

Parker Shipping (Lessee)			Stoughton Trailers (Lessor)		
Interest accrual and amortization expense (December 31, 2026):					
Interest Expense	1,595.28		Lease Receivable	1,595.28	
Lease Liability		1.595.28	Interest Revenue		1,595.28
Amortization Expense	10,000.00		No entry		
Right-of-Use Asset ($40,000 ÷ 4 years)		10,000.00			

Balance Sheet		Income Statement		Balance Sheet		Income Statement	
Noncurrent assets		Interest expense	$ 1,595.28	Current assets		Interest revenue	$1,595.28
Right-of-use assets	$20,000.00	Amortization expense	10,000.00	Lease receivable	$11,182.24		
Current liabilities				Noncurrent assets			
Lease liability	$11,182.24			Lease receivable	10,353.98		
Noncurrent liabilities							
Lease liability	10,353.98						

Third lease payment (January 1, 2027):					
Lease liability ($9,586.96 + $1,595.28)	11,182.24		Cash	11,182.24	
Cash		11,182.24	Lease Receivable		11,182.24
Interest accrual and amortization expense (December 31, 2027):					
Interest Expense	828.26		Lease Receivable	828.26	
Lease Liability		828.26	Interest Revenue		828.26
Amortization Expense	10,000.00				
Right-of-Use Assets ($40,000 ÷ 4 years)		10,000.00	No entry		

Balance Sheet		Income Statement		Balance Sheet		Income Statement	
Noncurrent assets		Interest expense	$ 828.26	Current assets		Interest revenue	$828.26
Right-of-use assets	$10,000.00	Amortization expense	10,000.00	Lease receivable	$11,182.24		
Current liabilities							
Lease liability	$11,182.24						

Fourth lease payment (January 1, 2028):					
Lease Liability ($10,353.98 + $828.26)	11,182.24		Cash	11,182.24	
Cash		11,182.24	Lease Receivable		11,182.24

20.3 Accounting for Operating Leases

LEARNING OBJECTIVE 3

Explain the accounting for operating leases.

Lessee Accounting for Operating Leases

If a lease does not meet any of the lease classification tests for a finance lease, a lessee should classify it as an operating lease.

- For leases classified as operating, the lessee records a right-of-use (ROU) asset and lease liability at commencement of the lease, similar to the finance lease approach.
- Unlike a finance lease, the lessee records the same amount for lease expense each period over the lease term (often referred to as the straight-line method for expense measurement).

Companies continue to use the effective-interest method for amortizing the lease liability. However, instead of reporting interest expense, a lessee reports interest on the lease liability as part of lease expense. Lease expense is a straight-line expense on the income statement

for operating leases and is comprised of interest on the lease liability and amortization of the right-of-use asset. To calculate lease expense, companies must:

1. Calculate interest on the lease liability using the effective interest method.
2. "Plug" amortization of the right-of-use asset to arrive at a straight-line expense.

As lease expense is recorded, both the right-of-use asset and the lease liability are amortized to zero at the end of the lease (see **Global Insights**).[8]

Lessee Operating Lease Example

To illustrate operating lease accounting for a lessee, assume that Miso Robotics Inc. (lessor) and **McDonald's** (lessee) sign a lease agreement dated January 1, 2025. The lease agreement specifies that Miso will grant right-of-use of one of its burger-flipping robots (Flippy) (is not of a specialized nature) at one of McDonald's locations. Information relevant to the lease is as follows.

- The lease agreement is non-cancelable with a term of three years.
- The robot has a cost and fair value at commencement of the lease of $60,000, an estimated economic life of five years, and a residual value at **the end of the lease** of $12,000 (unguaranteed).
- The lease contains no renewal options. The robot reverts to Miso at the termination of the lease.
- The implicit rate of Miso (the lessor) is 6% and is known by McDonald's.

Miso determines the rental payments such that it earns a rate of return of 6% per year on its investment, as shown in **Illustration 20.13**.

Fair value of leased equipment	$60,000.00
Less: Present value of the residual value ($12,000 × .83962 ($PVF_{3,6\%}$))	10,075.44
Amount to be recovered by lessor through lease payments	$49,924.56
Three beginning-of-year lease payments to earn a 6% return ($49,924.56 ÷ 2.83339($PVF\text{-}AD_{3,6\%}$))	$17,620.08

ILLUSTRATION 20.13 Computation of Lease Payments by Miso (Lessor)

Excel Solution

i	6%
n	3
PV	–$60,000
FV	$12,000
Type	1
PMT	$17,620.07

PMT(rate, nper, pv, [fv], [type])

McDonald's classifies the lease as an operating lease because none of the finance lease tests are met, as shown in **Illustration 20.14**.

ILLUSTRATION 20.14 Lease Classification Tests

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Miso at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is 60 % (3 ÷ 5) of the economic life of the asset, which is less than a major part of the life of the asset (75 %).
4. Present value test	The present value of the lease payments is $49,924.56*, which is 83.2% ($49,924.56 ÷ $60,000) of the fair value of the compactor. Therefore, the lease does not meet the present value test. *$17,620.08 × 2.83339 ($PVF\text{-}AD_{2,6\%}$)
5. Altemative use test	As indicated, the equipment is not of a specialized nature and is expected to have use to Miso when returned at the end of the lease.

Global Insights

The FASB indicates that reporting a single operating cost in the income statement more appropriately reflects the economics of an operating lease than the separate recognition of interest and amortization used in a finance lease. The International Accounting Standards Board (IASB) feels differently. Under the latest leasing guidelines developed by the IASB, all leases are classified as finance leases. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

[8]The FASB indicates that reporting a single operating cost in the income statement more appropriately reflects the economics of an operating lease than the separate recognition of interest and amortization used in a finance lease. The rationale for this approach is that an operating lease grants different rights to the lessee. The different rights are that in an operating lease, the lessee is not exposed to nor benefits from any value changes in the right-of-use asset over the term of the lease. **[13]**

McDonald's makes the following entry to record this operating lease.

	January 1, 2025		
Right-of-Use Asset		49,924.56	
Lease Liability			49,924.56

In addition, McDonald's records the first payment, as follows.

	January 1, 2025		
Lease Liability		17,620.08	
Cash			17,620.08

McDonald's then prepares a lease amortization schedule, as shown in **Illustration 20.15**, applying the effective-interest method and measuring interest on the liability as a function of the lease liability balance.

ILLUSTRATION 20.15 Lease Amortization Schedule

McDonald's
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment (a)	Interest (6%) on Liability (b)	Reduction of Lease Liability (c)	Lease Liability (d)
1/1/25				$49,924.56
1/1/25	$17,620.08	$ –0–	$17,620.08	32,304.48
1/1/26	17,620.08	1,938.27	15,681.81	16,622.67
1/1/27	17,620.08	997.41*	16,622.67	0.00
	$52,860.24	$2,935.68	$49,924.56	

(a) Lease payment as required by lease.
(b) Six percent of the preceding balance of (d) except for 1/1/25; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.05.

To record equal amounts of lease expense each period under the straight-line approach, the lessee computes interest on the lease liability (as shown in Illustration 20.15) and then amortizes the right-of-use asset in a manner that results in equal amounts of lease expense in each period. McDonald's computes the straight-line lease expense each year, as presented in the lease expense schedule in **Illustration 20.16**.

ILLUSTRATION 20.16 Lease Expense Schedule

McDonald's
Lease Expense Schedule

Date	(A) Lease Expense (Straight-Line)	(B) Interest (6%) on Liability	(C) Amortization of ROU Asset (A – B)	(D) Carrying Value of ROU Asset (D – C)
1/1/25				$49,924.56
12/31/25	$17,620.08	$1,938.27	$15,681.81	34,242.75
12/31/26	17,620.08	997.41	16,622.67	17,620.08
12/31/27	17,620.08		17,620.08	0.00
	$52,860.24	$2,935.68	$49,924.56	

As shown in Illustration 20.16, McDonald's does the following to record straight-line expense related to its operating lease.

1. McDonald's makes lease payments totaling $52,860.24 to Miso. McDonald's divides the $52,860.24 by the lease term of three years to compute its straight-line annual lease expense of $17,620.08 (Column A).
2. McDonald's records part of its annual lease expense based on interest related to amortizing its lease liability according to the lease amortization schedule provided in Illustration 20.15 Column B).
3. McDonald's deducts that amount of interest on the liability from the straight-line lease expense to arrive at the amount of amortization of the right-of-use asset (Column C).
4. McDonald's determines the carrying value of the right-of-use asset by deducting the amortization of the right-of-use asset each reporting period (Column D).

McDonald's prepares journal entries during the lease term to record lease expense, which is comprised of interest on the lease liability and the amortization of the right-of-use asset. McDonald's makes the following entry to record lease expense in 2025 on December 31, 2025.

December 31, 2025

Lease Expense	17,620.08	
Right-of-Use Asset ($17,620.08 − $1,938.27)		15,681.81
Lease Liability		1,938.27

As indicated in Illustration 20.16, McDonald's accrues interest ($1,938.27) and amortizes the right-of-use asset ($15,681.81). As a result, McDonald's records a single lease expense amount of $17,620.08 for the year 2025. The second lease payment on January 1, 2026, is as follows.

January 1, 2026

Lease Liability ($1,938.27 + $15,681.81)	17,620.08	
Cash		17,620.08

Journal entries in subsequent periods follow the same pattern, using the amounts presented in Illustration 20.16. The entry to record lease expense in the second year of the lease is as follows.

December 31, 2026

Lease Expense	17,620.08	
Right-of-Use Asset ($17,620.08 − $997.41)		16,622.67
Lease Liability		997.41

McDonald's records a single lease expense amount of $17,620.08, comprised of interest on the lease liability ($997.41 in 2026) and amortization of the right-of-use asset ($16,622.67 in 2026). The third and final lease payment is made on January 1, 2027, as follows.

January 1, 2027

Lease Liability ($997.41 + $16,622.67)	17,620.08	
Cash		17,620.08

McDonald's makes the following entry to record lease expense for 2027, the third year of the lease.

December 31, 2027

Lease Expense	17,620.08	
Right-of-Use Asset		17,620.08

Following this entry, the right-of-use asset has been fully amortized. As summarized in the lease expense schedule in Illustration 20.16, the total lease expense for the three years is comprised of the amortization of the right-of-use asset of $49,924.56, plus interest related to the lease liability of $2,935.68, for a total lease expense of $52,860.24. McDonald's presents the interest and right-of-use asset amortization related to the lease as a **single lease (operating) expense** in the income statement each year.

Lessor Accounting for Operating Leases

To illustrate lessor accounting for an operating lease, refer to the previously discussed lease agreement between Miso Robotics Inc. and McDonald's for the use of one of Miso's burger-flipping robots. Information relevant to the lease is as follows.

- The term of the lease is three years. The lease agreement is non-cancelable, requiring three annual rental payments of $17,620.08, with the first payment on January 1, 2025 (annuity-due basis).
- The robot has a cost and fair value at commencement of the lease of $60,000, an estimated economic life of five years, and a residual value at the end of the lease of $12,000 (unguaranteed). Miso depreciates assets, such as this robot, using double-declining-balance.
- The lease contains no renewal options. The robot reverts to Miso at the termination of the lease.
- The implicit rate of the lessor is known by McDonald's. McDonalds's incremental borrowing rate is 6%. Miso sets the annual rental rate to earn a rate of return of 6% per year (implicit rate) on its investment, as shown in Illustration 20.13.

Applying the same classification tests used by McDonald's (see Illustration 20.14), Miso classifies the lease as an operating lease because none of the finance lease tests are met. Under the operating method, Miso (the lessor) continues to recognize the asset on its balance sheet and recognizes lease revenue (generally on a straight-line basis) in each period.

To illustrate the operating method for the Miso/McDonald's lease, Miso records the lease payment on a straight-line basis on January 1, 2025, 2026, and 2027, as follows.

January 1, 2025, 2026, and 2027

Cash	17,620.08	
Unearned Lease Revenue		17,620.08

On December 31, 2025, 2026, and 2027, Miso records the recognition of the revenue each period as follows.

Unearned Lease Revenue	17,620.08	
Lease Revenue		17,620.08

Miso also records depreciation expense on the leased equipment (assuming double-declining-balance, given a cost basis of $60,000, and a five-year economic life), as follows.

Depreciation Expense ($60,000 × .40)	24,000.00	
Accumulated Depreciation—Equipment		24,000.00

Since the lessor owns the underlying asset, it depreciates the robot over its entire useful life. In addition to depreciation expense, Miso records other costs related to the lease arrangement, such as insurance, maintenance, and taxes in the period incurred. Miso classifies the leased equipment and accompanying accumulated depreciation as leased assets, separate from other property, plant, and equipment.

Put It into Practice LO 20.3

Account for Operating Lease—Lessee/Lessor

FACTS Consider the following revised terms of the lease between Parker Shipping Co. and Stoughton Trailers Inc. for the right-of-use of a hydraulic lift (see Put It into Practice LO 20.2). The lease, signed on January 1, 2025, specifies that Stoughton grants right-of-use of the lift to Parker under the following terms.

- The lease agreement is non-cancelable with a term of four years, requiring equal rental payments of $9,538.39 with the first payment on January 1, 2025 (annuity-due basis).
- The lift has a fair value at commencement of the lease of $40,000, an estimated **economic life of six years**. The lift has **a residual value** at the end of the lease of **$8,000 (unguaranteed)**. The cost of the lift on Stoughton's books is $30,000.
- The lease contains no renewal options. The lift reverts to Stoughton at the termination of the lease.
- The implicit rate of Stoughton (the lessor) is 8% and is known by Parker.

Stoughton determines the rental payments such that it earns a rate of return of 8% per year (implicit rate) on its investment, as shown in the following calculation.

Fair value of leased equipment	$40,000.00
Less: Present value of the residual value ($8,000 × .73503($PV_{4,8\%}$))	5,880.24
Amount to be recovered by lessor through lease payments	$34,119.76
Four beginning-of-year lease payments to earn an 8% return ($34,119.76 ÷ 3.57710 ($PVF\text{-}AD_{4,8\%}$))	$ 9,538.39

INSTRUCTIONS

a. Determine the classification of this lease arrangement for Parker (lessee).

b. Prepare the entry at inception of the lease for Parker.

c. Prepare the lease amortization and lease expense schedules for Parker.

d. Prepare the entries and show the financial statement presentation of the lease arrangement for Parker throughout the lease term.

e. Determine the classification of the lease for Stoughton Trailers (the lessor) and prepare the journal entries throughout the life of the lease.

SOLUTION

a. The lease is classified as an operating lease by Parker and Stoughton, as indicated in the following analysis.

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Stoughton at the end of the lease.
2. Purchase option test	There is no bargain purchase option in the lease.
3. Lease term test	The lease term is 66.67% (4 ÷ 6) of the economic life of the asset, which is less than the major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments is $34,119.76*, which is 85.3% ($34,119.76 ÷ $40,000) of the fair value of the lift. Therefore, it does not meet the present value test.
5. Altemative use test	As indicated, the equipment is not of a specialized nature and is expected to have use to Stoughton when returned at the end of the lease.

*$9,538.39 × 3.57710($PVF\text{–}AD_{4,8\%}$)

Thus, the lease is classified as an operating lease by both the lessee and lessor, as none of the classification tests are met to be classified as a finance lease.

b. Parker makes the following entry to record this operating lease and the first payment.

January 1, 2025

Right-of-Use Asset	34,119.76	
Lease Liability		34,119.76
Lease Liability	9,538.39	
Cash		9,538.39

c. The following schedule shows the interest expense and amortization of the lease liability, applying the effective-interest method.

Parker Shipping Co.
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment	Interest (8%) on Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/25				$34,119.76
1/1/25	$ 9,538.39	$ –0–	9,538.39	24,581.37
1/1/26	9,538.39	1,966.51	7,571.88	17,009.49
1/1/27	9,538.39	1,360.76	8.177.63	8,831.86
1/1/28	9,538.39	706.53*	8.831.86	0.00
	$38,153.56	$4,033.80	$34,119.76	

(a) Lease payment as required by lease.
(b) 8% of the preceding balance of (d) except for 1/1/25; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.02.

Parker computes straight-line expense and amortization on its right-of-use asset for each year of the lease, as presented in the following schedule.

Parker Shipping Co.
Lease Expense Schedule

Date	(A) Lease Expense (Straight-Line)	(B) Interest (8%) on Liability	(C) Amortization of ROU Asset (A − B)	(D) Carrying Value of ROU Asset (D − C)
12/31/24				$34,119.76
12/31/25	$ 9,538.39	$1,966.51	$ 7,571.88	26,547.88
12/31/26	9,538.39	1,360.76	8,177.63	18,370.25
12/31/27	9,538.39	706.53	8,831.86	9,538.39
12/31/28	9,538.39		9,538.39	0.00
	$38,153.56	$4,033.80	$34,119.76	

As indicated, the annual lease expense equals interest related to amortizing its lease liability plus amortization of the right-of-use asset. Parker decreases the right-of-use asset's book value each year by an amount (a plug) such that total annual lease expense is $9,538.39.

d. The journal entries by Parker over the life of the lease are as follows.

Parker Shipping (Lessee)

To recognize lease expense, record amortization (December 31, 2025):

Lease Expense		9,538.39	
Right-of-Use Asset			7,571.88
Lease Liability			1,966.51

Balance Sheet		Income Statement	
Noncurrent assets		Lease expense	$9,538.39
Right-of-use assets	$26,547.88		
Current liabilities			
Lease liability	$ 9,538.39		
Noncurrent liabilities			
Lease liability	17,009.49		

To record second lease payment (January 1, 2026):

Lease Liability		9,538.39	
Cash			9,538.39

To recognize lease expense, record amortization (December 31, 2026):

Lease Expense		9,538.39	
Right-of-Use Asset			8,177.63
Lease Liability			1,360.76

Balance Sheet		Income Statement	
Noncurrent assets		Lease expense	$9,538.39
Right-of-use assets	$18,370.25		
Current liabilities			
Lease liability	$9,538.39		
Noncurrent liabilities			
Lease liability	8,831.86		

To record third lease payment (January 1, 2027):

Lease Liability		9,538.39	
Cash			9,538.39

To recognize lease expense, record amortization (December 31, 2027):

Lease Expense		9,538.39	
Right-of-Use Asset			8,831.86
Lease Liability			706.53

Balance Sheet		Income Statement	
Noncurrent assets		Lease expense	$9,538.39
Right-of-use assets	$9,538.39		
Current liabilities			
Lease liability	$9,538.39		

To record lease payment (January 1, 2028):

Lease Liability	9,538.39	
Cash		9,538.39

To recognize lease expense, record amortization (December 31, 2028):

Lease Expense	9,538.39	
Right-of-Use Asset		9,538.39

After the entry to record lease expense and amortization on December 31, 2028, the lease liability and right-of-use asset are fully amortized. The lease expense for the four years ($38,153.56) is comprised of amortization of the right of-use asset of $34,119.76 plus interest associated with the amortization of the lease liability of $4,033.80. Parker combines interest on the liability and amortization of the right-of-use asset to report lease expense on the income statement over the life of the lease.

e. As shown in the evaluation of the classification tests in part (a), Stoughton classifies the lease as an operating lease because none of the sales-type lease criteria are met. Stoughton's entries throughout the lease are presented as follows.

Stoughton Trailers (Lessor)

Lease payments (January 1, 2025, 2026, 2027, 2028):

Cash	9,538.39	
Unearned Revenue		9,538.39

To recognize lease revenue, record depreciation (December 31, 2025, 2026, 2027, 2028):

Unearned Revenue (leases)	9,538.39	
Lease Revenue		9,538.39
Depreciation Expense ($30,000 ÷ 6)	5,000	
Accumulated Depreciation—Equipment		5,000

Under the operating method, Stoughton (the lessor):

- Continues to recognize the asset on its balance sheet.
- Recognizes equal amounts of rental revenue (straight-line basis) in each period.
- Depreciates the leased asset on a straight-line basis over the asset's remaining economic life.

Stoughton reports lease revenue separately from other revenues in its income statement or notes to its financial statements. A lessor should classify the leased equipment and accompanying accumulated depreciation separately from plant assets it owns as leased assets.

20.4 Special Lease Accounting Problems

LEARNING OBJECTIVE 4

Discuss the accounting and reporting for special features of lease arrangements.

The features of lease arrangements that cause unique accounting problems are:

1. Residual values.
2. Other lease adjustments.

3. Bargain purchase options.
4. Short-term leases.
5. Presentation, disclosure, and analysis.

Residual Values

Residual values of the leased asset are treated differently by the lessee and lessor. Further complicating their treatment, sometimes these values are guaranteed by the lessee and sometimes they are unguaranteed. Finally, the treatment of residual values is different for purposes of the classification test and calculation of the lease liability.

Lessee Perspective—Guaranteed Residual Value

In the Coffee & Beans/Starbucks lease discussed earlier, the residual value was guaranteed by Starbucks (lessee). This guaranteed residual value did not affect the computation of the lease liability, however, because it was probable that the expected residual value was greater than the guaranteed residual value. In other words, Starbucks did not report a liability related to this guarantee because Starbucks expects that it will not have to make a cash payment at the end of the lease. Starbucks will simply return the bean roaster to Coffee & Beans at the end of the lease.

The guidelines for accounting for a guaranteed residual value are as follows. [14]

1. If it is probable that the expected residual value is equal to or greater than the guaranteed residual value, the lessee should not include the guaranteed residual value in the computation of the lease liability. **The full guaranteed residual value should, however, continue to be included in the classification test.**
2. If it is probable that the expected residual value is less than the guaranteed residual value, the **difference** between the expected and guaranteed residual values should be included in computation of the lease liability. This difference in value is the lessee's best estimate of the amount they will owe to the lessor at the end of the lease.

To illustrate a situation where the expected residual value is below the guaranteed residual value, assume in the earlier Coffee & Beans/Starbucks example that it is probable that the residual value will be $3,000 instead of the guaranteed amount of $5,000. If Starbucks estimates the residual value of the bean roaster at the end of the lease to be $3,000, Starbucks includes $2,000 ($5,000 − $3,000) as an additional lease payment in determining the lease liability and right-of-use asset. **Illustration 20.17** shows the computation of the lease liability/right-of-use asset for Starbucks in this situation.

ILLUSTRATION 20.17
Computation of Lessee's Capitalized Amount—Guaranteed Residual Value

Starbucks Capitalized Amount (4% Rate) **Annuity-Due Basis, Including Guaranteed Residual Value**	
Present value of five annual rental payments ($20,711.11 × 4.62990($PVF\text{-}AD_{5,4\%}$))	$95,890.35*
Present value of probable residual value payment of $2,000 due five years after date of commencement ($2,000 × .82193($PVF_{5,4\%}$))	1,643.86
Lessee's lease liability/right-of-use asset	$ 97,534.21

*Rounded by $0.02.

Starbucks makes the following entries to record the lease and the first payment.[9]

January 1, 2025

Right-of-Use Asset	97,534.21	
Lease Liability		97,534.21
Lease Liability	20,711.11	
Cash		20,711.11

[9]Would Coffee & Beans' lease receivable change in this scenario? No! Regardless of the guarantee, the lessor must include its best estimate of the residual value in its lease receivable.

Starbucks prepares a lease amortization schedule to show interest expense and related amortization of the lease liability over the five-year period. The schedule, shown in **Illustration 20.18**, is based on an expected residual value payment of $2,000 ($5,000 − $3,000) at the end of five years.

ILLUSTRATION 20.18 Lease Amortization Schedule for Lessee—Guaranteed Residual Value

Starbucks
Lease Amortization Schedule—Guaranteed Residual value
Annuity-Due Basis

Date	Annual Lease Payment	Interest (4%) on Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/25				$97,534.21
1/1/25	$20,711.11	$ –0–	$20,711.11	76,823.10
1/1/26	20,711.11	3,072.92	17,638.19	59,184.91
1/1/27	20,711.11	2,367.40	18,343.71	40,841.20
1/1/28	20,711.11	1,633.65	19,077.46	21,763.74
1/1/29	20,711.11	870.55	19,840.56	1,923.18
1/1/30	2,000.00	76.82*	1,923.18	0.00
	$105,555.55	$8,021.34	$97,534.21	

(a) Lease payment as required by lease.
(b) Four percent of the preceding balance of (d) except for 1/1/25; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.11.

Illustration 20.19 shows, in comparative form, Starbucks's entries for the first two years of the lease when:

1. Starbucks expects to pay $2,000 at the end of the lease related to the guaranteed residual value (see Illustration 20.18).
2. Starbucks does not expect to owe an additional payment for the guaranteed residual value (see Illustration 20.5).

ILLUSTRATION 20.19 Journal Entries—Guaranteed Residual Value

Guaranteed Residual Value ($2,000 expected payment)			Guaranteed Residual Value (no expected payment)		
Capitalization of lease (January 1, 2025):					
Right-of-Use Asset	97,534. 21		Right-of-Use Asset	95,890.35	
Lease Liability		97,534. 21	Lease Liability		95,890.35
First payment (January 1, 2025):					
Lease Liability	20,711.11		Lease Liability	20,711.11	
Cash		20,711.11	Cash		20,711.11
Adjusting entry for accrued interest (December 31, 2025):					
Interest Expense	3,072.92		Interest Expense	3,007.17	
Lease Liability		3,072.92	Lease Liability		3.007.17
Entry to record amortization of the ROU asset (December 31, 2025):					
Amortization Expense	19,506.84		Amortization Expense	19,178.07	
Right-of-Use Asset ($97,534.21 ÷ 5 years)		19,506.84	Right-of- Use Asset ($95,890.35 ÷ 5 years)		19,178.07
Second payment (January 1, 2026):					
Lease Liability ($3,072.92 + $17,638.19)	20,711.11		Lease Liability ($3,007.17 + $17,703.94)	20,711.11	
Cash		20,711.11	Cash		20,711.11

Following similar entries in subsequent years of the lease and using the amounts in Illustration 20.18, at the end of the lease term (January 1, 2030), Starbucks returns the asset to Coffee & Beans and makes the entries shown in **Illustration 20.20** under the two situations.

ILLUSTRATION 20.20 Final Payments—Guaranteed and Unguaranteed Residual Value

Guaranteed Residual Value ($2,000 expected payment)			Guaranteed Residual Value (no expected payment)	
Final payment (January 1, 2030):				
Lease Liability	2,000.00			
Cash		2,000.00	No entry	

As indicated in the entries summarized in Illustrations 20.19 and 20.20, the Right-of-Use Asset and the Lease Liability accounts have been fully amortized and have zero balances. If at the end of the lease (January 1, 2030) Starbucks has no additional obligations under the residual value guarantee, no further entries are needed.

But what if the fair value of the underlying asset is less than the expected residual value? In this case, Starbucks will have to further compensate Coffee & Beans under the residual value guarantee and Starbucks will record a cash payment and a loss. For example, assume that due to poor maintenance of the bean roaster, Starbucks and Coffee & Beans agree that the fair value of the asset is sufficiently below the expected fair value such that Starbucks must pay an additional $1,000 upon returning the bean roaster to Coffee & Beans on January 1, 2030. In this case, Starbucks reports a loss of $1,000, as shown in the following journal entry.

January 1, 2030		
Lease Liability	2,000	
Loss on Lease (Residual Value Guarantee)	1,000	
Cash		3,000

Lessee Perspective—Unguaranteed Residual Value

A lessee does not include an unguaranteed residual value in the computation of the lease liability, whether it is a finance lease or an operating lease. At the end of the lease, the lessee simply returns the leased asset to the lessor without any other payment. The Miso/McDonald's operating lease example illustrates the lessee accounting for an unguaranteed residual value.

Lessor Perspective—Guaranteed Residual Value

In the Starbucks/Coffee & Beans example, Starbucks guaranteed a residual value of $5,000. In computing the amount to be recovered from the rental payments, the present value of the residual value was subtracted from the fair value of the bean roaster to arrive at the amount to be recovered by the lessor (see Illustration 20.9). **Illustration 20.21** shows this computation.

ILLUSTRATION 20.21 Lease Payment Calculation

Amount to be recovered by lessor through lease payments	$95,890.35
Five beginning-of-year lease payments to earn a 4% return ($95,890.35 ÷ 4.62990($PVF\text{-}AD_{5,4\%}$))	$20,711.11

The computation in Illustration 20.21 is the same whether the residual value is guaranteed or unguaranteed.

The Coffee & Beans/Starbucks lease agreement accounted for the lease as a sales-type lease. Coffee & Beans therefore recorded sales revenue and related cost of goods sold at the start of the lease. Coffee & Beans accounts for the guaranteed residual value as part of sales revenue because the lessor receives this amount at the end of the lease either in cash or in the residual value returned.

Lessor Perspective—Unguaranteed Residual Value

What happens if the residual value for Coffee & Beans is unguaranteed? In this case, there is less certainty that the unguaranteed residual portion of the asset has been "sold."

The lessor recognizes sales revenue and cost of goods sold only for the portion of the asset for which recovery is assured.

Both sales revenue and cost of goods sold are reduced by the present value of the unguaranteed residual value.

Given that the amount subtracted from sales revenue and cost of goods sold are the same, the **gross profit computed will still be the same** amount as when a guaranteed residual value exists.

To compare a sales-type lease with a guaranteed residual value to one with an unguaranteed residual value, assume the same facts as in the Coffee & Beans/Starbucks lease situation. That is:

1. The sales price is $100,000.
2. The expected residual value is $5,000 (the present value of which is $4,109.65).
3. The leased equipment has an $85,000 cost to the dealer, Coffee & Beans.

Illustration 20.22 shows the computation of the amounts relevant to a sales-type lease, under both a guaranteed and unguaranteed residual value situation.

ILLUSTRATION 20.22 Computation of Lease Amounts by Coffee & Beans Financial—Sales-Type Lease

	Guaranteed Residual Value	Unguaranteed Residual Value
Lease receivable	$100,000 ($20,711.11 × 4.62990($PVF\text{-}AD_{5,4\%}$)) + $5,000 × .82193($PVF_{5,4\%}$)	Same
Sales price of the asset	$100,000	$95,890.35 ($100,000 − $4,109.65)
Cost of goods sold	$85,000	$80,890.35 ($85,000.00 − $4,109.65)
Gross profit	$15,000($100,000 − $85,000)	$15,000 ($95,890.35 − $80,890.35)

Coffee & Beans records the same gross profit ($15,000) at the point of sale whether the residual value is guaranteed or unguaranteed. However, the amounts recorded for sales revenue and the cost of goods sold are different between the guaranteed and unguaranteed situations. Why?

There is uncertainty surrounding the realization of the unguaranteed residual value. That is, the lessor is not sure what it will receive at the end of the lease regarding the residual value and companies must capture this uncertainty in how they report the revenue and cost of sales. As a result, sales revenue and related cost of goods sold are reduced by the present value of the residual value. This results in **the sales revenue and cost of goods sold amounts being reported at different amounts under an unguaranteed residual value situation**.

Coffee & Beans makes the entries with respect to the lease arrangement under guaranteed and unguaranteed residual value situations as shown in Illustration 20.23.

ILLUSTRATION 20.23 Entries for Guaranteed and Unguaranteed Residual Values—Sales-Type Lease

	Guaranteed Residual Value			Unguaranteed Residual Value		
	To record sales-type lease at commencement (January 1, 2025):					
Sales and cost of goods sold differ; gross profit the same	Cost of Goods Sold	85,000.00		Cost of Goods Sold	80,890.35	
	Lease Receivable	100,000.00		Lease Receivable	100,000.00	
	Sales Revenue		100,000.00	Sales Revenue		95,890.35
	Inventory		85.000.00	Inventory		85,000.00
	To record receipt of the first lease payment (January 1), 2025):					
Lease receipt the same	Cash	20,711.11		Cash	20,711.11	
	Lease Receivable		20,711.11	Lease Receivable		20,711.11
	To recognize interest revenue during the first year (December 31, 2025):					
Accrual of interest the same	Lease Receivable	3,171.56		Lease Receivable	3,171.56	
	Interest Revenue		3,171.56	Interest Revenue		3,171.56
	To record receipt of the second lease payment (January 1, 2026):					
Lease receipt the same	Cash	20,711.11		Cash	20,711.11	
	Lease Receivable ($3,171.56 + $17,539.55)		20,711.11	Lease Receivable ($3,171.56 + $17,539.55)		20,711.11
	To recognize interest revenue during the second year (December 31, 2026):					
Accrual of interest the same	Lease Receivable	2,469.97		Lease Receivable	2,469.97	
	Interest Revenue		2,469.97	Interest Revenue		2,469.97
	To record receipt of residual value at $3,000 end of lease term (January 1, 2030):					
Guaranteed does not result in loss; unguaranteed does	Inventory	3,000.00		Inventory	3,000.00	
	Cash	2,000.00		Loss on lease	2,000.00	
	Lease Receivable		5,000.00	Lease Receivable		5,000.00

Illustration 20.24 provides a summary of the accounting treatment for guaranteed and unguaranteed residual values by lessees and lessors related to the present value classification test and the measurement of the lease liability and receivable.

ILLUSTRATION 20.24 Summary of Treatment of Residual Values

	Guaranteed Residual Value	Unguaranteed Residual Value
Lessee		
Classification test	Include full amount of residual value in present value rest	Ignore
Measurement of liability	• If expected value of residual value >/= to guaranteed residual value, ignore • If expected value of residual value < guaranteed residual value, include the present value of the difference between the expected and guaranteed residual value in computation of lease liability	Ignore
Lessor		
Classification test	Include	Ignore
Measurement of receivable	Include	Include

Note: When residual value is not guaranteed in a sales-type lease, lessor reduces Sales Revenue and Cost of Goods Sold by the present value of the unguaranteed residual value.

Other Lease Adjustments

Additional lease adjustments that affect the measurement of lease assets and liabilities relate to the following:

1. Executory costs.
2. Lease prepayments and incentives.
3. Initial direct costs.

Executory Costs

If **Amazon** leases warehouse space, who pays the property taxes on the building? What about insurance? These are standard business costs associated with leased assets. Each leasing contract must address by whom and how these costs will be paid. **Executory costs** are normal expenses associated with owning a leased asset, such as property insurance and property taxes. The accounting for executory costs depends on how the lease is structured, that is, whether the lease is a gross lease or a net lease.

- **Gross lease**. The payments to the lessor are fixed as part of the rental payments in the contract.
- **Net lease**. The lessee makes variable payments to a third party or to the lessor directly for the executory costs.

Example 20.8
Gross versus Net Leases

FACTS Ortiz Company enters into a lease arrangement to lease a retail space in a shopping mall from Bryant Inc. The lease term is 2 years with monthly payments of $15,000 per month.

Scenario One: Ortiz does not have any obligation to pay any of the property taxes or property insurance on the retail space. Ortiz estimates that Bryant is paying approximately $1,500 per month related to these executory costs.

Scenario Two: Ortiz must reimburse Bryant, Inc. for the property taxes and property insurance (or pay a third party directly).

QUESTION How should Ortiz account for the executory costs in each scenario?

SOLUTION

Scenario One: Ortiz and Bryant have a **gross** lease arrangement in that the property taxes and property insurance are included in the rental payments made by Ortiz. In this arrangement, the payment for the executory costs is fixed (per the rental agreement) and should be included in the computation of the lease liability.

Scenario Two: Ortiz and Bryant have a **net** lease arrangement because the lessee makes variable payments to a third party or to the lessor for the executory costs. In this case, Ortiz is responsible for paying directly the executory costs and therefore it is a variable payment which is expensed in the period incurred (not included in the lease liability and right-of-use assets).

As indicated, the way that a lease structures executory costs can impact a company's balance sheet?

- Executory costs included in the fixed payments required by the lessor should be included in lease payments for purposes of measuring the lease liability.
- Payments by the lessee made directly to the taxing authority or insurance provider are considered variable payments and are expensed as incurred. **[15]**

Lease Prepayments and Incentives

Lessees will always start with the lease liability to determine the amount to record for the right-of-use asset. However, they may need to adjust that starting value for items like lease prepayments, incentives, and initial direct costs to arrive at the right-of-use asset.

1. Lease prepayments made by the lessee **increase** the right-of-use asset.
2. Lease incentive payments made by the lessor to the lessee **reduce** the right-of-use asset.
3. Initial direct costs incurred by the lessee (discussed in the next section) **increase** the right-of-use asset.

The following formula identifies the adjustments made to the lease liability balance to determine the proper amount to report for the right-of-use asset.

Initial Measurement of Lease Liability + **Prepaid Lease Payments** − **Lease Incentives Received** + **Initial Direct Costs** = **Right-of-Use Asset**

Initial Direct Costs

Initial direct costs are incremental costs of a lease that would not have been incurred had the lease not been executed. **[16]** Costs directly or indirectly attributable to negotiating and arranging the lease (e.g., an allocation of internal legal costs) are not considered initial direct costs. **Illustration 20.25** provides examples of costs included and excluded from initial direct costs from the lessee and lessor side.[10]

ILLUSTRATION 20.25 Initial Direct Costs

Included	Excluded
• Commission (including payments to employees acting as selling agents)	• Employee salaries
• Legal fees resulting from the execution of the lease	• Internal engineering costs
• Lease document preparation costs incurred after the execution of the lease	• Legal fees for services rendered before the execution of the lease
• Consideration paid for a guarantee of residual value by an unrelated third party	• Negotiating lease term and conditions
	• Advertising
	• Depreciation
	• Costs related to an idle asset

Initial direct costs incurred by the lessee are included in the cost of the right-of-use asset but are **not** recorded as part of the lease liability.

Example 20.9 Right-of-Use Cost Analysis

FACTS Mangan Company leases solar equipment from DeMallie Co. for 8 years starting on January 1, 2025. The lease is a finance/sales-type lease. The terms of the lease are as follows.

1. DeMallie will pay Mangan $30,000 as a cash incentive for entering the lease by January 1, 2025.
2. DeMallie pays initial direct costs of $5,000 for legal fees related to the execution of the lease.
3. Mangan incurred $1,500 of initial direct costs (commission paid to lease negotiator) which are payable by January 1, 2025.
4. Mangan must pay not only the first rental payment of $10,000 on January 1, 2026, but has to prepay the last month's rental payment on December 31, 2025.
5. The initial measurement of the liability is $400,000.

QUESTION What is the amount to be reported for Mangan's right-of-use asset at the commencement date?

[10] Adapted from PricewaterhouseCoopers, *Leases—2016*, p. 4-4.

SOLUTION

The measurement of the right-of-use asset for Mangan is as follows.

Initial measurement of the lease liability	$400,000
Cash incentive received from DeMallie (lessor)	(30,000)
Initial direct costs (commission paid to lease negotiator)	1,500
Prepayments made by Mangan to DeMallie before the lease commencement	10,000
Measurement of right-of-use asset at January 1, 2025	$381,500

Mangan therefore reports the right-of-use asset at $381,500. DeMaille (the lessor) expenses its initial direct costs in the period incurred, given DeMaille reported a gross profit related to its sale-type lease.

For lessors, initial direct costs often are more significant because they are usually the party that solicits lessees as part of their sales activities. As a result, lessors often engage attorneys to prepare the legal documents, as well as pay commissions incurred in connection with the execution of a lease.

Lessor accounting for initial direct costs depends on the type of lease. [17]

- For **operating leases**, a lessor defers the initial direct costs and amortizes them as expenses over the term of the lease.
- For **sales-type leases**, the lessor expenses initial direct costs at lease commencement (in **the period** in which it recognizes the profit on the sale). An exception is when there is no selling profit or loss on the transaction. If there is no selling profit or loss, the initial direct costs are deferred and recognized over the lease term.

What about other **internal costs** that the lessor incurs related to leasing activities such as advertising, servicing existing leases, and establishing and monitoring credit policies? What about the costs for supervision and administration or for expenses such as rent and depreciation?

- These **internal direct costs should not be included in initial direct costs.**
- Such costs would have been incurred regardless of whether a lease was executed. As a result, internal direct costs are generally expensed as incurred.

Bargain Purchase Options

Recall that a **bargain purchase option** allows the lessee to purchase the leased property for a future price that is substantially lower than the asset's expected future fair value.

- This price is so favorable at the lease's commencement that the future exercise of the option appears to be reasonably certain.
- **The lessee must increase the present value of the lease payments by the present value of the option price**. Why? Consider the definition of a liability. By virtue of considering the purchase option a **bargain**, we can consider this payment a **probable future sacrifice of economic benefits.**

For example, assume that **Starbucks** (see Illustration 20.17) had an option to buy the leased equipment for $2,000 at the end of the five-year lease term. At that point, Starbucks and Coffee & Beans expect the fair value to be $18,000. The significant difference between the option price and the fair value creates a bargain purchase option as the exercise of that option is reasonably certain.

A bargain purchase option and a guaranteed residual value with a probable amount owed have similar impact on lease accounting.

- Both assume the lessee will have an expected payment at the end of the lease.
- Computations, amortization schedule, and entries prepared for this $2,000 bargain purchase option are identical to those shown for the $2,000 probable amount to be owed under the guaranteed residual value (see Illustrations 20.18, 20.19, and 20.20).

So, **everything** is the same? Not quite. The only difference between the accounting treatment for a bargain purchase option and a guaranteed residual value of identical amounts and circumstances is in the **computation of the annual amortization**.

- In the case of a guaranteed residual value, Starbucks amortizes the right-of-use asset over the lease term.
- In the case of a bargain purchase option, Starbucks uses the **economic life** of the underlying asset, given that the lessee takes ownership of the asset at the end of the lease.

Short-Term Leases

A **short-term lease** is a **lease** that, at the **commencement date**, has a **lease term** of 12 months or less. Rather than recording a right-of-use asset and lease liability, lessees may elect to expense the lease payments as incurred. **[18]** What about a short-term lease with an option to extend the term of the lease (renewal option?)

- In these situations, renewal options that are reasonably certain of exercise by the lessee are included in the lease term.
- Therefore, a one-year lease with a renewal option that the lessee is reasonably certain to exercise is not a short-term lease.

Example 20.10
Short-Term Leases

FACTS Consider the following information for Thomas Company, a lessee.

a. Thomas Company enters into an arrangement to lease a crane for a 6-month period, with the option to extend the term for up to 9 additional months (in 3-month increments). After considering the nature of the project, Thomas determines that it expects to use the crane for only 9 months and is therefore reasonably certain that it will exercise only one of the 3-month renewal options.

b. Thomas Company enters into the same arrangement as in part (a), but the project for which the crane is being used is now expected to take 15 months to complete. After considering the nature of the project, Thomas determines that it expects to use the crane for 15 months and is therefore reasonably certain that it will exercise all three renewal options.

QUESTION How should Thomas report these two situations?

SOLUTIONS

a. Since the lease term is not more than 12 months, Thomas is able to elect the short-term lease exception because the lease term is not more than 12 months as it does not expect to exercise the renewal option.

b. The expected lease term is greater than 12 months because Thomas expects to exercise all three renewal options. Thus, Thomas is not able to apply the short-term lease exception and must record a right-of-use asset and related lease liability.

Presentation and Decision Analysis

Presentation

Presented in Illustration 20.26 is a summary of how the **lessee** reports the information related to finance and operating leases in the financial statements.

	Balance Sheet	Income Statement
Finance lease	Right-of-use asset Lease liability	Amortization expense Interest expense
Operating lease	Right-of-use asset Lease liability	Lease expense

ILLUSTRATION 20.26 Presentation in Financial Statements—Lessee

Illustration 20.27 summarizes **lessor** presentation of lease information in the financial statements.

	Balance Sheet	Income Statement
Sales-type lease	Lease receivable presented separate from other assets Derecognize the leased asset	Interest revenue, sales revenue, cost of goods sold
Operating lease	Continue to recognize assets subject to operating leases as property, plant, and equipment	Revenue generally recognized on a straight-line basis Depreciation expense on the leased asset

ILLUSTRATION 20.27 Presentation in Financial Statements—Lessor

Disclosure

Lessees and lessors must also provide additional qualitative and quantitative disclosures to help financial statement users assess the amount, timing, and uncertainty of future cash flows. These disclosures are intended to supplement the amounts provided in the financial statements. Qualitative disclosures to be provided by both lessees and lessors are summarized in Illustration 20.28. [19]

- Nature of its leases, including general description of those leases.
- How variable lease payments are determined.
- Existence and terms and conditions for options to extend or terminate the lease and for residual value guarantees.
- Information about significant assumptions and judgments (e.g., discount rates).

ILLUSTRATION 20.28 Qualitative Lease Disclosures

Illustration 20.29 presents the type of quantitative information that should be disclosed for **the lessee**.

- Total lease cost.
- Finance lease cost, segregated between the amortization of the right-of-use assets and interest on the lease liabilities.
- Operating and short-term lease cost.
- Weighted-average remaining lease term and weighted-average discount rate (segregated between finance and operating leases).
- Maturity analysis of finance and operating lease liabilities, on an annual basis for a minimum of each of the next five years, the sum of the undiscounted cash flows for all years thereafter.

ILLUSTRATION 20.29 Lessee Quantitative Disclosures

Illustration 20.30 shows the type of quantitative information that should be disclosed for **the lessor**.

ILLUSTRATION 20.30 Lessor Quantitative Disclosures

- Lease-related income, including profit and loss recognized at lease commencement for sales-type and direct financing leases, and interest income.
- Income from variable lease payments not included in the lease receivable.
- The components of the net investment in sale-type and direct financing leases, including the carrying amount of the lease receivable, the unguaranteed residual value, and any deferred profit on direct financing leases.
- A maturity analysis for operating lease payments and a separate maturity analysis for the lease receivable (sales-type and direct financing leases).
- Management approaches for risk associated with residual value of leased assets (e.g., buyback agreements or third-party insurance).

Decision Analysis

Many companies that lease are finding their balance sheets growing substantially as a result of implementing the standard on leasing. Estimates as to its dollar impact on the assets and liabilities of companies vary, but it will be in the trillions of dollars. For example, here are the possible effects on the assets and liabilities for the following five companies (in millions) as a result of capitalizing lease assets and related liabilities:

Walgreens	$33,721
AT&T	31,047
CVS Health	27,282
Walmart	17,910
FedEx Corporation	16,385

How will this change the analysis of a company's financial statements? Some contend that "grossing up" the assets and liabilities on companies' balance sheets will not have any significant impact on analysis, based on information in the financial statements. Their rationale is that stockholders' equity does not change substantially, nor will net income. In addition, it is argued that users can determine the obligations that lessees are incurring by examining the notes to the financial statements.

What do you think? With the increase in the assets and liabilities as a result of the new standard, a number of financial metrics used to measure the profitability and solvency of companies will change, which could create challenges when performing financial analysis.

On the profitability side:

- Return on assets will decrease because a company's assets will increase, but net income will often be the same.
- Furthermore, analysts commonly focus on income subtotals, such as earnings before interest, taxes, and depreciation and amortization (EBIDTA), which likely will require some adjustments as companies amortize right-of-use assets.

On the solvency side:

- Debt to equity will increase,
- Interest coverage ratio will decrease.

In addition, recent studies indicate that using only note disclosures to determine lease obligations have understated their numerical impact.[11]

[11]Pepa Kraft, "Rating Agency Adjustment to GAAP Financial Statements and Their Effect on Ratings and Credit Spreads," *The Accounting Review* (March 2015), Vol. 90, No. 2, pp 641–674. In addition, a study by J.P. Morgan showed significant variation in the range of analysts' estimates of the underlying lease obligations under the new rules. See P. Elwin and S. C. Fernandes, "Leases on B/S from 2017? Retailers and Transport Will Be Hit Hard in Leverage Terms," *Global Equity Research*, J.P. Morgan Securities (May 17, 2013).

One thing is certain—the grossing up of the assets and liabilities related to lease arrangements will have significant consequences on the organizational, operational, and contractual side. Examples are:

1. States often levy taxes based on property amounts, which will now be higher.
2. Performance metrics to evaluate management will have to change for companies, particularly when growth rates in assets are used or returns on assets are used to measure performance.
3. Companies will have contracts with the government for which reimbursement is based on rent expense, which will change the compensation agreement.
4. Debt covenants will require revisions.

Analytics in Action: Connoisseur of Coffee or Wrangler of Big Data?

With 32,000 stores in 83 markets around the globe, you could argue that **Starbucks** spends as much time perfecting a cup of java as it does analyzing real estate. Given that almost all of its company-operated stores are leased, Starbucks spends a considerable amount of time evaluating potential leases.

Starbucks employs data intelligence tools to identify retail locations by evaluating massive amounts of data, such as proximity to other Starbucks locations, demographics, traffic patterns, and more. Once settled on a location, the details of the lease must be worked out, such as agreeing on a lease term, rental payments, and renewal options, to name a few. Finally, Starbucks must organize all of its lease data in a way that allows the company to capture the necessary information for financial reporting purposes, such as calculating the present value of lease payments to capitalize the right-of-use asset on its balance sheet.

Leasing its retail locations clearly offers Starbuck enhanced flexibility over the more permanent option of purchasing the real estate. And thanks to the updated leasing standard, the balance sheets of companies that rely on leasing look pretty similar to those that purchase their assets. Starbucks adopted the new leasing standard for its fiscal year 2020 financial reports, adding $8.4 and $9.0 billion to its assets and liabilities, respectively!

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

APPENDIX **20A**

Sale-Leasebacks

LEARNING OBJECTIVE *5

Describe the lessee's accounting for sale-leaseback transactions.

In a **sale-leaseback** arrangement, a company (the seller-lessee) transfers an asset to another company (the buyer-lessor) and then leases that asset back from the buyer-lessor. For example, when **Darden Restaurants** sold off its Red Lobster division to **Golden Gate Capital** (a private equity firm) for $2.1 billion, it then leased these restaurants back from Golden Gate Capital. This transaction is shown in **Illustration 20A.1**.

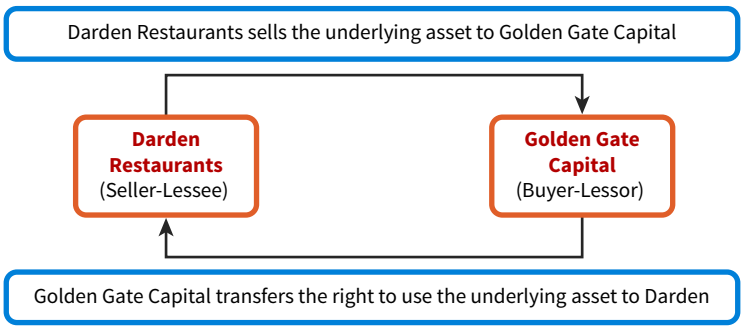

Darden Restaurants sells the underlying asset to Golden Gate Capital
Darden Restaurants (Seller-Lessee)
Golden Gate Capital (Buyer-Lessor)
Golden Gate Capital transfers the right to use the underlying asset to Darden

ILLUSTRATION 20A.1
Sale-Leaseback

Why do companies like Darden Restaurants engage in sale-leaseback transactions? Some major reasons are:

1. Darden can use the cash that otherwise would be tied up in property to expand its operations. At the same time, it continues to use the property through the lease term.
2. Darden can structure the lease arrangement so issues such as repurchase provisions, refinancing issues, and conventional financing costs are minimized.
3. Darden may receive a tax advantage because entire rental payments are tax-deductible, whereas under a conventional financing, only interest and depreciation can be deducted. If the lease has a significant land component (land is not depreciable) or if the fair value of the property is much greater than the carrying value of the property (depreciation limited to cost of property), then the sale lease-back arrangement generally reduces tax payments.

The advantages to Golden Gate Capital (buyer-lessor) are:

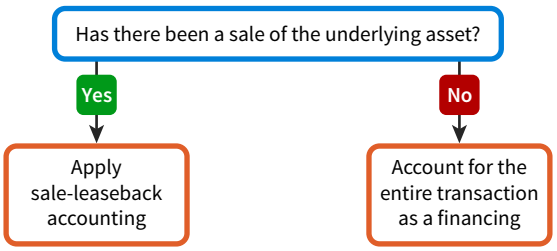
1. It generally can earn a higher rate of return under a sale-leaseback than under traditional financing.
2. During the lease term, Golden Gate is protected from a downturn in the real estate market and may have an inflation hedge, provided the property appreciates in value.

Sale-leasebacks are common and the dollar amounts related to these transactions are significant (approximately $15 billion per year). Financial institutions (e.g., **Bank of America** and **First Chicago**) have used this technique for their administrative offices, public utilities (e.g., **Ohio Edison** and **Pinnacle West Corporation**) for their generating plants, and airlines (such as **Alaska Air Group**) for their aircraft.

Accounting Issues in Sale-Leaseback Transactions

When Darden transferred the Red Lobster restaurants to Golden Gate Capital and then leased them back, the accounting issue is whether the transaction is a sale or a financing. To determine whether it is a sale, revenue recognition guidelines are used. That is, if control has passed from seller to buyer, then a sale has occurred. Conversely, if control has not passed, the transaction is recorded as a financing (often referred to as a failed sale). **[20]** **Illustration 20A.2** highlights these two approaches.

ILLUSTRATION 20A.2
Sale-Leaseback Accounting


Has there been a sale of the underlying asset?
Yes
No
Apply sale-leaseback accounting
Account for the entire transaction as a financing

Sale Transaction

As indicated, if Darden (seller-lessee) **gives up control** of the Red Lobster restaurants, the transaction is a sale. In a sale, **gain or loss recognition** is appropriate. Darden then records the transaction as follows.

1. Increases cash and reduces the carrying value of the asset to zero (referred to as derecognizing the asset).
2. Recognizes a gain or loss as appropriate.
3. Accounts for the leaseback in accordance with lease accounting guidance used in this chapter.

Example 20A.1
Sale with Operating Lease

FACTS Assume that **Scott Paper** sells one of its buildings having a carrying value of $580,000 (building $800,000 less accumulated depreciation $220,000) to **General Electric** for $623,110. It then leases the building back from General Electric for $50,000 a year, for eight of the building's 15 years of remaining economic life. Assume that the present value of these lease payments is equal to $310,000, such that the lease is classified as an operating lease.

QUESTION What are the entries that Scott Paper should make to record the sale-leaseback?

SOLUTION

To record the sale-leaseback:

Cash	623,110	
Accumulated Depreciation—Buildings	220,000	
Buildings		800,000
Gain on Disposal of Plant Assets ($623,110 − $580,000)		43,110

To record the operating lease from General Electric:

Right-of-Use Asset	310,000	
Lease Liability		310,000

Financing Transaction (Failed Sale)

What if the terms of Darden's lease led to a finance lease classification? This would mean that control of the Red Lobster restaurants passed back to Darden through the terms of the lease. In this case, the original sale of Red Lobster was not a sale at all. Darden would simply record the transaction as a financing transaction.

In Example 20A.1, **Scott Paper** does not record a sale if the lease from **General Electric** is classified as a finance lease. The reason: If any of the lease classification tests are met, Scott, not General Electric, controls (owns) the asset. If Scott **continues to control the building, it should not record a sale nor recognize a gain or loss** on the transaction (see **Underlying Concepts**). In essence, Scott Paper is borrowing money from General Electric (often referred to as a financing or a **failed sale**). In a financing (failed sale), Scott:

- Does not reduce the carrying value of the building.
- Continues to depreciate the building as if it was the legal owner.
- Recognizes the sale proceeds from General Electric as a financial liability.

The entry to record the financing is as follows.

Cash	623,110	
Notes Payable		623,110

Underlying Concepts

A sale-leaseback under a financing transaction is similar in substance to the parking of inventories (discussed in Chapter 6). The ultimate economic benefits remain under the control of the "seller-lessee," so revenue (gain) should not be recognized.

Sale-Leaseback Example

To illustrate the accounting treatment accorded a sale-leaseback transaction over the lease term, assume that **American Airlines** on January 1, 2025, sells a used, standard-design Boeing 757 having a carrying amount on its books of $30,000,000 to **CitiCapital** for $33,000,000. American immediately leases the aircraft back under the following conditions.

- The term of the lease is seven years. The lease agreement is non-cancelable, requiring equal rental payments of $4,881,448 at the end of each year (ordinary annuity basis), beginning December 31, 2025.
- The lease contains no renewal or purchase options. The plane reverts to CitiCapital at the termination of the lease.

- The aircraft has a fair value of $33,000,000 on January 1, 2025, and an estimated remaining economic life of 10 years. The residual value (unguaranteed) at the end of the lease is $13,000,000.
- The annual payments assure the lessor an 8% return (which is the same as American's incremental borrowing rate).

Applying the classification tests, the lease-back of the airplane is classified as an operating lease because none of the sales-type lease criteria are met, as indicated in **Illustration 20A.3**.

ILLUSTRATION 20A.3 Lease Classification Tests

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur: the asset reverts to CitiCapital at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is 70% (7 ÷ 10) of the remaining economic life of the asset, which is less than the major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments Is $25,414.624*, which is 77% ($25,414,625 ÷ $33,000,000) of the fair value of the aircraft or less than 90%. Therefore, the lease does not meet the present value test.
5. Altemative use test	As indicated, the equipment is not of a specialized nature and is expected to have use to CitiCapital when returned at the end of the lease.

*$4,881,448 × 5.20637($PVF\text{-}OA_{7,8\%}$)

Thus, this arrangement is accounted for as a sale, rather than a failed sale, because the leaseback does not transfer control of the asset back to American; that is, only the right-of-use for seven years is granted through the lease. **Illustration 20A.4** presents the typical journal entries to record the sale-leaseback transactions for American and CitiCapital for the first two years of the lease.

ILLUSTRATION 20A.4 Comparative Entries for Sale-Leaseback for Lessee and Lessor

American Airlines (Lessee)			CitiCapital (Lessor)		
Sale of aircraft by American to CitiCapital (January 1, 2025):					
Cash	33,000,000		Aircraft	33,000,000	
Gain on Disposal of Plant Assets		3,000,000	Cash		33,000,000
Aircraft		30,000,000			
Right-of-Use Asset	25,414,624				
Lease Liability		25,414,624			
First lease payment (December 31, 2025):					
Lease Expense ($2,033,170 + $2,848,278)	4,881,448		Cash	4,881,448	
Lease Liability (Schedule A)	2,848,278		Lease Revenue		4,881,448
Right-of-Use Asset (Schedule B)		2,848,278			
Cash		4,881,448			
Depreciation expense on the aircraft (December 31, 2025):					
No entry			Depreciation Expense ($33,000,000 ÷ 10)	3,300,000	
			Accumulated Depreciation—Leased Equipment		3,300,000

American Airlines (Lessee)			CitiCapital (Lessor)		
Second lease payment (December 31, 2025):					
Lease Expense ($1,805,308 + $3,076,140)	4,881,448		Cash	4,881,448	
Lease Liability	3,076,140		Lease Revenue		4,881,448
Right-of-Use Asset		3,076,140			
Cash		4,881,448			
Depreciation expense on the aircraft (December 31, 2025):					
No entry			Depreciation Expense ($33,000,000 ÷ 10)	3,300,000	
			Accumulated Depreciation—Leased Equipment		3,300,000

Schedule A: Partial Lease Amortization Schedule

Date	Annual Lease Payment	Interest (8%) on Liability	Reduction or Lease Liability	Lease Liability
Jan. 2025				$25,414,624
Dec. 2025	$4,881,448	$2,033,170	$2,848,278	22,566,346
Dec. 2026	4,881,448	1,805,308	3,076,140	19,490,206

Schedule B: Partial Lease Expense Schedule

Date	(A) Lease Expense (Straight-Line)	(B) Interest (8%) on Liability	(C) Amortization of ROU Asset (A – B)	(D) Carrying Value of ROU Asset (D – C)
Jan. 2025				$25,414,624
Dec. 2025	$4,881,448	$2,033,170	$2,848,278	22,566,346
Dec. 2026	4,881,448	1,805,308	3,076,140	19,490,206

As indicated, under the operating method, American amortizes the lease liability and right-of-use asset, resulting in straight-line expense recognition. CitiCapital (the buyer-lessor) continues to recognize the asset on its balance sheet and recognizes equal amounts of rental revenue (straight-line basis) in each period. It **depreciates the leased asset generally on a straight-line basis**.

APPENDIX **20B**

Direct Financing Lease (Lessor)

LEARNING OBJECTIVE *6

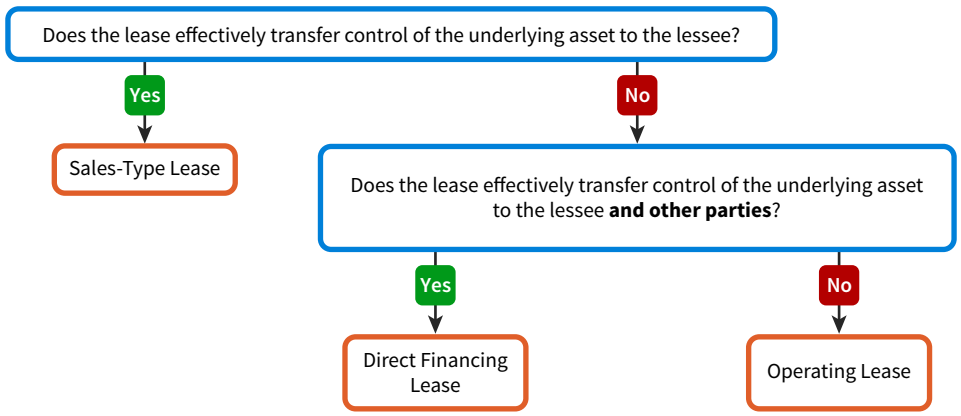
Describe the lessor's accounting for a direct financing lease.

Lessors account for a lease as a sales-type lease if the lease transfers control of the underlying asset to the lessee, based on meeting one of the lease classification tests presented in Illustration 20.2. Leases that do not meet any of the classification tests are generally recorded as operating leases.

- However, lessors use a third lease classification—a **direct financing lease**—in one special situation.
- This situation occurs when the lessor **relinquishes control of the asset** to the lessee but there is also involvement of a third party. [21]
- This situation is common when a third-party residual value guarantee is involved.

Illustration 20B.1 illustrates the decision process for direct financing lease classification.

ILLUSTRATION 20B.1 Direct Financing Lease Classification


Does the lease effectively transfer control of the underlying asset to the lessee?
Yes
No
Sales-Type Lease
Does the lease effectively transfer control of the underlying asset to the lessee and other parties?
Yes
No
Direct Financing Lease
Operating Lease

For example, in the Miso/McDonald's robot lease in the chapter, both parties classified the lease as an operating lease because none of the transfer of control criteria were met. A condition of that agreement was that the residual value was not guaranteed by the lessee. It turns out that if the residual value was guaranteed by McDonald's, the 90% test would be met. Miso and McDonald's would account for this lease as a finance (sales-type) lease. However, if Miso (the lessor) obtains the **residual value guarantee from a third party, Miso (the lessor) classifies the lease as a direct financing lease, not a sales-type lease**.[12]

Direct Financing Lease Accounting

The basic difference between a direct financing lease and a sales-type lease relates to the profit on the sale. In a sales-type lease, the profit is recognized immediately. **In a direct financing lease, the profit is deferred and recognized over the life of the lease.**[13]

- This accounting—with no selling profit recognized at the commencement of a direct financing lease—aligns with revenue recognition criteria because the lease does not transfer complete control of the underlying asset to the lessee.
- However, the lessor transfers substantially all the risks and rewards of ownership through the right-of-use of the underlying asset to one or more third parties.

That is, in a direct financing lease, **the presence of a third-party guarantee effectively converts the lessor's risk arising from the underlying asset into a credit risk**.

Given that the lessor now has credit risk, the FASB concluded that the lessor should not be permitted to recognize gross profit on the lease at the commencement of the lease. Instead, the lessor should defer the profit and recognize this profit over the life of the lease arrangement.[14] [23]

Direct Financing Lease Example

Assume that Ormand Company (the lessor) enters into a lease agreement with **Amazon** for the use of one of Ormand's standard motorized warehouse package pickers. Information relevant to the lease is as follows.

- The lease commencement date is January 1, 2025, with a term of three years. The lease agreement is non-cancelable, requiring equal rental payments at the end of each year (ordinary annuity).

[12]For classification as a direct financing lease, it must be probable that the lessor will collect the lease payments and any amounts related to the residual value guarantee(s).

[13]Losses at commencement of a direct financing lease are recognized immediately. [22]

[14]In addition, lessor initial direct costs are deferred and amortized over the life of the lease.

- The picker has a fair value at commencement of the lease of $30,000 and a carrying value of $28,000, with an estimated residual value of $6,000 at the end of the lease. The picker has an estimated economic life of five years. Amazon provides a **guarantee that the residual value of the picker will be at least $6,000 at the end of the lease**.
- The lease contains no renewal options, and the picker reverts to Ormand at the termination of the lease.
- Ormand sets the annual rental rate to earn a rate of return of 6% per year (implicit rate) on its investment, as shown in **Illustration 20B.2**.

ILLUSTRATION 20B.2 Computation of Lease Payments

Fair value of leased equipment	$30,000.00
Less: Present value of the residual value($6,000 × .83962 ($PVF_{3,6\%}$))	5,037.72
Amount to be recovered by lessor through lease payments	$24,962.28
Three end-of-year lease payments to earn a 6% return ($24,962.28 ÷ 2.67301 ($PVF\text{-}OA_{3,6\%}$))	$ 9,338.64

Evaluation of the classification tests, based on these facts, indicates that this lease is classified as a sales-type lease for Ormand because the present value test is met, as indicated in **Illustration 20B.3**.

ILLUSTRATION 20B.3 Lease Classification Tests

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Ormand at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is 60% (3 ÷ 5) of the economic life of the asset, which is less than the major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments is $30,000.00*, which is 100% ($30,000 ÷ $30,000), which is greater than or equal to 90% of the fair value of the picker. Therefore, **the lease meets the present value test.**
5. Alternative use test	As indicated, the equipment is not of a specialized nature and is expected to have use to Ormand when returned at the end of the lease.

*Present value of rental payments plus residual value guarantee discounted at 6%

Present value of five annual rental payments ($9,338.64 × 2.67301($PVF_{3,6\%}$))	$24,962.28
Present value of guaranteed residual value of $6,000 at end of the lease ($6,000 × .83962($PVF_{3,6\%}$))	5,037. 72
	$30,000.00

Note that the residual value guarantee is provided by the lessee and therefore is included in the lease payments used in the present value test for classification purposes. Ormand accounts for the lease as a sale-type lease, recording a lease receivable and reducing the carrying value of the underlying asset (Inventory) to zero.

For a sales-type lease, Ormond makes the following journal entry at the beginning of the lease.

Lease Receivable	30,000	
Cost of Goods Sold	28,000	
Sales Revenue		30,000
Inventory		28,000

On January 1, 2025, Ormand therefore reports gross profit on the sale of the package picker of $2,000 ($30,000 − $28,000). In subsequent periods, Ormond reduces the lease receivable by the payments received and recognizes interest revenue using the 6% implicit rate.

On the other hand, if the residual value is **guaranteed by an unrelated third party, the lessor classifies the lease as a direct financing lease.** Ormond uses the direct financing method because, as discussed earlier, the lessor still maintains some control of the asset. That is, as a result of a third-party guarantee, the lessor does not effectively transfer all risks and rewards (control) of the underlying asset (until all residual value guarantees are satisfied). In this situation, and consistent with other revenue recognition concepts, sales revenue and related cost of goods sold are not recognized. Instead, Ormond recognizes a deferred gross profit of $2,000, which is the difference between the fair value of the property ($30,000) and the carrying amount of the asset ($28,000). This deferred gross profit reduces the lease receivable in the lease, as the following formula shows.

Lease Receivable	−	Deferred Gross Profit	=	Net Lease Receivable
$30,000	−	$2,000	=	$28,000

On January 1, 2025, Ormond makes the following entry to record the direct financing lease.

January 1, 2025

Lease Receivable	30,000	
Deferred Gross Profit		2,000
Inventory		28,000

Subsequent accounting for the direct financing lease is based on a discount rate that will amortize the net lease receivable to zero over the life of the lease. That is, in a direct financing lease, the rate used to amortize the lower net lease receivable (lease receivable less deferred gross profit) will be higher. This results because the rate includes interest revenue on the lease receivable and revenue from amortizing deferred gross profit. In other words, consider the following.

1. In a normal sale, Ormand would receive lease payments over the life of the lease which, on a present value basis, equals the lease receivable of $30,000 (a 6% rate of return). Interest on the lease receivable over the life of the lease is therefore $4,015.92. This computation is shown in **Illustration 20B.4**.

ILLUSTRATION 20B.4 Sales-Type Lease Amortization

Ormand Company
Sales-Type Lease Amortization Schedule
Ordinary Annuity Basis

Date	Annual Lease Payment (a)	Interest (6% on Receivable (b)	Reduction Of Lease Receivable (c)	Lease Receivable (d)
1/1/25				$30,000.00
12/31/25	$9,338.64	$1,800.00	$ 7,538.64	22,461.36
12/31/26	9,338.64	1,347.68	7,990.96	14,470.40
12/31/27	9,338.64	868.24*	8,470.40	6,000.00
12/31/27	6,000.00	–0–	6,000.00	–0–
	$34,015.92	$4,015.92	$30,000.00	

(a) Lease payment as required by lease.
(b) 6% of the preceding balance of (d).
(c) (a) minus (b).
*Rounded by $0.02.

2. In a direct financing arrangement, Ormand receives the same lease payments, which on a present value basis equals $28,000 (a 9.5% rate of return).[15] This computation is shown in **Illustration 20B.5**.

ILLUSTRATION 20B.5 Direct Financing Lease Amortization

Ormand Company
Direct Financing Lease Amortization Schedule
Ordinary Annuity Basis

Date	Annual Lease Payment (a)	Interest (9.5%) on Receivable (b)	Reduction Of Net Lease Receivable (c)	Net Lease Receivable (d)
1/1/25				$28,000.00
12/31/25	$9,338.64	$2,660.00	$6,678.64	21,321.36
12/31/26	9,338.64	2,025.53	7,313.11	14,008.25
12/31/27	9,338.64	1,330.39*	8,008.25	6,000.00
12/31/27	6,000.00		6,000.00	–0–
	$34,015.92	$6,015.92	$28,000.00	

(a) Lease payment as required by lease.
(b) 9.5% of the preceding balance of (d).
(c) (a) minus (b).
(d) Preceding balance minus (c).
*Rounded by $0.39.

As shown in Illustration 20B.5, Ormand then records Lease Revenue based on a discount rate of 9.5% applied to the net lease receivable balance. In this case, the revenue on the lease receivable is $6,015.92, which is $2,000 ($6,015.92 − $4,015.92) higher than under Illustration 20B.4. The difference results because the total lease revenue each year of the lease is comprised of interest revenue on the lease receivable plus the recognition of a portion of deferred gross profit. Ormand makes the following entry in 2025, based on the amounts presented in Illustration 20B.5.[16]

December 31, 2025

Cash	9,338.64	
Deferred Gross Profit ($2,660 − $1,800)	860.00	
Lease Revenue		2,660.00
Lease Receivable		7,538.64

[15]The 9.5% rate is determined through trial and error or with a financial calculator to arrive at a discount rate for present values of the residual value (single sum) and payments (annuity), such that the net lease receivable, including the deferred gross profit, is amortized to zero (given the lease payments, as computed on the lease receivable of $30,000 and a 6% rate).

[16]The reduction in deferred gross profit each year equals the difference in yearly amounts of interest revenue at 6% and 9.5%, as shown in column (b) of Illustrations 20B.4 and Illustration 20B.5, as indicated in the following table.

Date	Interest (6%) on Receivable (a)	Lease Revenue (9.5%) (b)	Reduction In Deferred Gross Profit (b) – (a)	Deferred Gross Profit Balance
1/1/25				$2,000.00
12/31/25	$1,800.00	$2,660.00	$860.00	1,140.00
12/31/26	1,347.68	2,025.53	677.85	462.15
12/31/27	868.24	1,330.39	462.15	-0-

A Lease Revenue account is used because both deferred gross profit and interest are recognized.

Ormand reports the following information related to the direct financing lease at December 31, 2025, either in the balance sheet or notes to the financial statements, as shown in **Illustration 20B.6**.

ILLUSTRATION 20B.6 Direct Financing Lease Balances

Leases	
Lease receivable ($30,000.00 − $7,538.64)	$22,461.36
Less: Deferred gross profit ($2,000 − $860)	1,140.00
Net lease receivable	$21,321.36

Ormand makes the following entries for payments in 2026 and 2027.

December 31, 2026		
Cash	9,338.64	
Deferred Gross Profit ($2,025.53 − $1,347.68)	677.85	
Lease Revenue		2,025.53
Lease Receivable		7,990.96
December 31, 2027		
Cash	9,338.64	
Deferred Gross Profit ($1,330.39 − $868.24)	462.15	
Lease Revenue		1,330.39
Lease Receivable		8,470.40

After the entry on December 31, 2027, to recognize interest revenue, Lease Receivable has a balance of $6,000, which equals the guaranteed residual value (the deferred gross profit has been fully amortized).

Assuming the underlying asset has a fair value of $6,000 at the end of the lease, Ormand makes the following entry.[17]

December 31, 2027		
Inventory	6,000.00	
Lease Receivable		6,000.00

Review and Practice

Key Terms Review

bargain purchase option 20-6
bargain renewal option 20-7
*direct financing lease 20-45
executory costs 20-35
*failed sale 20-43
finance lease 20-5
guaranteed residual value 20-8
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operating lease 20-5
residual value 20-8
*sale-leaseback 20-41
sales-type lease 20-16
short-term lease 20-38
unguaranteed residual value 20-9

[17]If the fair value of the leased asset is less than $6,000—e.g., $5,000 upon return—Ormand receives $1,000 from the third-party guarantor to compensate for the decline in the value of the asset below the guaranteed residual value. If the asset returned has a fair value in excess of $6,000, Ormand records the asset at the carrying amount of the residual value, and the gain is unrealized until the asset is sold.

Learning Objectives Review

1 Describe the environment related to leasing transactions.

A lease is a contract that conveys the right to control the use of identified property, plant, or equipment (an identified asset) for a period of time in exchange for consideration.

Advantages to Lessee	Advantages to Lessor
1. 100% financing.	1. Profitable interest margins.
2. Less obsolescence.	2. Stimulation of product sales.
3. Flexibility.	3. Efficient tax sharing.
4. Tax benefits.	4. Residual value profits.

Leases are classified as finance or operating. Leases should be classified as finance if they meet any of the following criteria.

- The lease transfers ownership of the property to the lessee.
- The lease contains an option to purchase the underlying asset that the lessee is reasonably certain to exercise.
- The lease term is a major part (75%) of the remaining economic life of the underlying asset.
- The present value of the lease payments equals or exceeds substantially all (90%) of the underlying asset's fair value.
- The lessor does not have an alternative use for the asset at the end of the lease.

Lessors evaluate the same tests as lessees to determine the classification of a lease as sales-type or operating.

2 Explain the accounting for finance leases.

For a finance/sales-type lease, the lessee records a right-of-use asset and related liability at the commencement of the lease. The lessee recognizes interest expense on the lease liability over the life of the lease using the effective-interest method and records amortization expense on the right-of-use asset. The lessor determines the lease payments, based on the rate of return—the implicit rate—needed to justify leasing the asset, taking into account the credit standing of the lessee, the length of the lease, and the status of the residual value (guaranteed versus unguaranteed).

For a sales-type lease, the lessor accounts for the lease in a manner similar to the sale of an asset. At lease commencement, the lessor takes the asset off the books and records a receivable equal to the present value of the lease payments. Any dealer or manufacturer selling profit on the transfer of the leased asset is recognized in income at commencement of the lease. The lessor recognizes interest revenue on the lease receivable over the life of the lease using the effective-interest method.

3 Explain the accounting for operating leases.

In an operating lease, a lessee obtains control of only **the use of the underlying asset but not ownership of the underlying asset itself**. Lessees and lessors classify and account for all leases that fail to meet all of the five classification tests as operating leases. Lessees account for operating leases using the straight-line, single-lease cost approach. Lease expense is recorded using the straight-line approach for operating leases.

To achieve a single operating cost that is constant from period to period, companies continue to use the effective-interest method for amortizing the lease liability. However, instead of reporting interest expense, a lessee reports interest on the lease liability as part of Lease Expense. In addition, the lessee no longer reports amortization expense related to the right-of-use asset. Instead, it "plugs" in an amount that increases the Lease Expense account so that it is the same amount from period to period. This plugged amount then reduces the right-of-use asset, such that both the right-of-use asset and the lease liability are amortized to zero at the end of the lease.

Under the operating method, lessors continue to recognize the asset on the balance sheet and record equal amounts of lease revenue (straight-line basis) in each period. It depreciates the leased asset generally on a straight-line basis.

4 Discuss the accounting and reporting for special features of lease arrangements.

The features of lease arrangements that cause unique accounting problems are (1) residual values, (2) other lease adjustments (including initial direct costs), (3) bargain purchase options, (4) short-term leases (lessee), and (5) presentation, disclosure, and analysis.

The Effect of Residual Values, Guaranteed and Unguaranteed. In setting the lease payments, lessors work under the assumption that the residual value at the end of the lease term will be realized whether guaranteed or unguaranteed. This ensures that the lessor will recover the same net investment whether the residual value is guaranteed or unguaranteed. Whether the estimated residual value is guaranteed or unguaranteed is of both economic and accounting consequence to the lessee. The accounting consequence is that the lease payments, the basis for classification, include the guaranteed residual value but exclude the unguaranteed residual value. For measuring the lessee's lease liability and right-of-use asset, however, only the amount of the guaranteed residual value that is probable to be paid under the guarantee is included in the lease payments to be capitalized. In effect, the guaranteed residual value is an additional lease payment that the lessee will pay in property or cash, or both, at the end of the lease term. An unguaranteed residual value from the lessee's viewpoint is the same as no residual value in terms of its effect upon the lessee's method of computing the lease payments and the capitalization of the leased asset and the lease liability. See Illustration 20.24 for a summary.

Other Lease Adjustments. The lease liability is the starting point to determine the amount to record for the right-of-use asset. Companies adjust the measurement of the right-of-use asset as follows: (1) lease prepayments made by the lessee increase the right-of-use asset, (2) lease incentive payments made by the lessor to the lessee reduce the right-of-use asset, and (3) initial direct costs incurred by the lessee increase the right-of-use asset. Incremental costs of a lease that would not have been incurred had the lease not been executed are included in the cost of the right-of-use asset but should not be recorded as part of the lease liability. For operating leases, lessors defer initial direct costs and amortize them as expenses over the term of the lease. For sales-type leases, lessors generally expense initial direct costs at lease commencement. Lessor internal costs are not included in initial direct costs and are expensed as incurred.

Bargain Purchase Option. A bargain purchase option increases the present value of the lease payments by the present value of the option price for the lessee. In computing annual amortization of the right-of-use asset with this type of option, the lessee uses the economic life of the underlying asset.

Short-Term Leases. A short-term lease is a lease that, at the commencement date, has a lease term of 12 months or less. Rather than recording a right-of-use asset and lease liability, lessees may elect to forego recognition of a right-of-use asset and lease liability. If this election is taken, the lease payments are recognized in net income on a straight-line basis over the lease term. Variable lease payments for short-term leases should be recorded in the period in which the obligation for the payment is incurred.

Presentation, Disclosure, and Analysis. Presentation and disclosure by lessors and lessees of amounts related to leases vary depending on whether leases are classified as finance/sales-type or operating. See Illustrations 20.26 and 20.27 (presentation in the balance sheet and income statement) and Illustrations 20.28, 20.29, and 20.30 (disclosures in the notes to the financial statements) for summaries of presentation and disclosure requirements. Expanded recognition of lease assets and liabilities under the recent lease accounting rules will result in significant impacts on analysis, based on information in the financial statements. A number of financial metrics used to measure the profitability and solvency of companies (return on assets and debt to equity ratios) will change, which could create challenges when performing financial analysis.

*5 Describe the lessee's accounting for sale-leaseback transactions.

In a sale-leaseback arrangement, a company (the seller-lessee) transfers an asset to another company (the buyer-lessor) and then leases that asset back from the buyer-lessor. If the leaseback is classified as a finance/sales-type lease, the sale is not recognized (referred to as a failed sale) because the seller-lessee continues to control the asset—the transaction is accounted for as a financing arrangement. If the leaseback is classified as an operating lease, sale-leaseback accounting is appropriate. Under sale-leaseback accounting, gross profit on the sale is recognized and the leaseback is accounted for as an operating lease with recognition of a right-of-use asset, lease liability, and subsequent amortization, resulting in straight-line expense recognition. The buyer-lessor continues to recognize the asset on its balance sheet and recognizes equal amounts of lease revenue (straight-line basis) in each period. It depreciates the leased asset generally on a straight-line basis.

*6 Describe the lessor's accounting for a direct financing lease.

In a direct financing lease, the lessee does not **obtain control** (ownership) of the asset, but the lessor **relinquishes control**. That is, the lessee controls use of the asset during the lease but will return the asset to the lessor at the end of the lease. However, the lessor will recover the value of the asset through lease payments **plus the third-party residual value guarantee**. In this situation, rather than following operating lease accounting: (1) the lessor derecognizes the underlying asset and recognizes a net investment in the lease (which consists of the lease receivable, unguaranteed residual asset, and deferred gross profit), and (2) the lessor gross profit is deferred and amortized into income over the lease term.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

1. Bradley Co. is expanding its operations and is in the process of selecting the method of financing this program. After some investigation, the company determines that it may (1) issue bonds and with the proceeds purchase the needed assets, or (2) lease the assets on a long-term basis. Without knowing the comparative costs involved, answer these questions:
   - **a.** What are the possible advantages of leasing the assets instead of owning them?
   - **b.** What are the possible disadvantages of leasing the assets instead of owning them?
   - **c.** How will the balance sheet be different if Bradley Co. leases the assets rather than purchasing them?
2. What are the major advantages to a lessor for becoming involved in a leasing arrangement?
3. From a lessee perspective, distinguish between a finance lease and an operating lease.
4. Identify the lease classification tests and how they are applied.
5. Morgan Handley and Tricia Holbrook are discussing the new leasing standard. Morgan believes the standard requires that the lessee use the implicit rate of the lessor in computing the present value of its lease liability. Tricia is not sure if Morgan is correct. Explain the discount rate that the lessee should use to compute its lease liability.

6. Explain which of following would result in the lessee classifying the lease as a finance lease.

   a. The lease is for a major part of the economic life of the asset.

   b. The lease term is for 12 months or less.

   c. The lease transfers ownership of the asset at the end of the lease.

7. Paul Singer indicated that "all leases must now be capitalized on the balance sheet." Is this statement correct? Explain.

8. Describe the following terms: (a) residual value, (b) guaranteed residual value, and (c) initial direct costs.

9. Explain the following: (a) bargain purchase and renewal options and (b) the accounting for bargain purchase and bargain renewal options.

10. What payments are included in the lease liability?

11. Wonda Stone read somewhere that a residual value guarantee is used for computing the present value of lease payments for lease classification purposes but is treated differently when measuring its lease liability. Is Wonda correct in her interpretation? Explain.

12. Identify the amounts included in the measurement of the right-of-use asset.

13. Harcourt Company enters into a lease agreement with Brunsell Inc. to lease office space for a term of 72 months. Lease payments during the first year are $5,000 per month. Each year thereafter, the lease payments increase by an amount equivalent to the percentage increase in the Consumer Price Index (CPI). For example, if the CPI increases 2% in the second year, the monthly payment increases to $5,100. In the second year, the CPI increases by 3%. What are the lease payment amounts used to record this lease in the second year?

14. Describe the accounting procedures involved in applying the operating lease method by a lessee.

15. Describe the accounting procedures involved in applying the finance lease method by a lessee.

16. Explain the difference in lessee income statement and balance sheet presentation for a finance versus an operating lease.

17. Dr. Alice Foyle (lessee) has a non-cancelable, 20-year lease with Brownback Realty Inc. (lessor) for the use of a medical building. Taxes, insurance, and maintenance are paid by the lessee in addition to the fixed annual payments, of which the present value is equal to the fair value of the leased property. At the end of the lease period, title becomes the lessee's at a nominal price. Considering the terms of this lease, comment on the nature of the lease transaction and the accounting treatment that should be accorded it by the lessee.

18. Identify the lease classifications for lessors and the criteria that must be met for each classification. What is the relevance of revenue recognition criteria for lessor accounting for leases?

19. What is the difference between a lease receivable and a net investment in the lease?

20. Explain the accounting involved in applying the operating lease method by a lessor.

21. Explain the difference in lessor income statement presentation for a sales-type versus operating lease.

22. Walker Company is a manufacturer and lessor of computer equipment. What should be the nature of its lease arrangements with lessees if the company wishes to account for its lease transactions as sales-type leases?

23. Metheny Corporation's lease arrangements qualify as sales-type leases at the time of entering into the transactions. How should the corporation recognize sales revenue and cost of goods sold in these situations?

24. Packer Company (the lessor) concludes that its lease meets one of the tests to be classified as a sales-type lease. However, collection of lease payments is not probable. In this case, how should Packer account for any lease payments received?

25. The residual value is the estimated fair value of the leased property at the end of the lease term.

   a. Of what significance is (1) an unguaranteed and (2) a guaranteed residual value in the lessee's accounting for a finance lease transaction?

   b. Distinguish between lease payments used to determine lease classification compared to lease payments for measuring the lease liability.

26. Of what significance is (a) an unguaranteed and (b) a guaranteed residual value in the lessor's accounting for a sales-type lease transaction?

27. Describe the effect on the lessee of a "bargain purchase option" on accounting for a finance lease transaction.

28. What are "initial direct costs" and how are they accounted for by lessees and lessors?

29. What is a short-term lease? Describe lessee accounting for a short-term lease.

30. What disclosures should be made by lessees and lessors related to future lease payments?

*31. What is the nature of a "sale-leaseback" transaction?

*32. Sanchez Company (seller-lessee) enters into a sale-leaseback to sell its corporate headquarters for $18 million to Harper Bank. The carrying value of the headquarters at the date of sale is $14 million. Sanchez then leases back the headquarters in exchange for $180,000 per year in rental payments. The leaseback is considered an operating lease. How should Sanchez account for this sale?

*33. Explain the distinction between a direct financing lease and a sales-type lease for a lessor.

*34. Explain the differences in revenue recognition for the lessor in a sales-type lease, a direct financing lease, and an operating lease.

*35. Describe the accounting procedures involved in applying the direct financing method by a lessor.

Brief Exercises

BE20.1 (LO 2) Callaway Golf Co. leases telecommunications equipment from Photon Company. Assume the following data for equipment leased from Photon Company. The lease term is 5 years and requires equal rental payments of $31,000 at the beginning of each year. The equipment has a fair value at the commencement of the lease of $150,000, an estimated useful life of 8 years, and a guaranteed residual value at the end of the lease of $15,500. Photon set the annual rental to earn a rate of return of 6%, and

this fact is known to Callaway. The lease does not transfer title or contain a bargain purchase option, and is not a specialized asset. How should Callaway classify this lease?

BE20.2 (LO 2) Jelly Co. processes jam and sells it to the public. Jelly leases equipment used in its production processes from Squishy, Inc. This year, Jelly leases a new piece of equipment from Squishy. The lease term is 5 years and requires equal rental payments of $15,000 at the beginning of each year. In addition, there is a renewal option to allow Jelly to keep the equipment one extra year for a payment at the end of the fifth year of $10,000 (which Jelly is reasonably certain it will exercise). The equipment has a fair value at the commencement of the lease of $76,024 and an estimated useful life of 7 years. Squishy set the annual rental to earn a rate of return of 5%, and this fact is known to Jelly. The lease does not transfer title, does not contain a bargain purchase option, and the equipment is not of a specialized nature. How should Jelly classify this lease?

BE20.3 (LO 2) Samson Company leases a building and land. The lease term is 6 years and the annual fixed payments are $800,000. The lease arrangement gives Samson the right to purchase the building and land for $11,000,000 at the end of the lease. Based on an economic analysis of the lease at the commencement date, Samson is reasonably certain that the fair value of the leased assets at the end of lease term will be much higher than $11,000,000. What are the total lease payments in this lease arrangement?

BE20.4 (LO 2, 4) Fieger Company leases equipment for 8 years with an annual rental of $2,000 per year or $16,000 in total. General Leasing (the lessor) agrees to provide Fieger with $300 for the first 2 years of the lease to defray needed repairs to the equipment. Determine the lease payments that Fieger will pay for the first 3 years of the lease agreement.

BE20.5 (LO 1) Sanders Fashion Company enters into a lease arrangement with Highpoint Leasing for 5 years. Sanders agrees to pay 4% of its net sales as a variable lease payment. Sanders does not pay any fixed payments. Sanders is a highly successful company that has achieved over $1,000,000 in net sales over the last 7 years. Both Sanders and Highpoint forecast that net sales will be a much greater amount than $1,000,000 in subsequent years. As a result, it is highly certain that Sanders will make payments of at least $40,000 ($1,000,000 × .04) each year. What is the lease payment amount Sanders should use to record its right-of-use asset?

BE20.6 (LO 2) Waterworld Company leased equipment from Costner Company, beginning on December 31, 2024. The lease term is 4 years and requires equal rental payments of $41,933 at the beginning of each year of the lease, starting on the commencement date (December 31, 2024). The equipment has a fair value at the commencement date of the lease of $150,001, an estimated useful life of 4 years, and no estimated residual value. The appropriate interest rate is 8%. Prepare Waterworld's 2024 and 2025 journal entries, assuming Waterworld depreciates similar equipment it owns on a straight-line basis.

BE20.7 (LO 2) Rick Kleckner Corporation recorded a right-of-use asset for $300,000 as a result of a finance lease on December 31, 2024. Kleckner's incremental borrowing rate is 8%, and the implicit rate of the lessor was not known at the commencement of the lease. Kleckner made the first lease payment of $48,337 on December 31, 2024. The lease requires eight annual payments. The equipment has a useful life of 8 years with no residual value. Prepare Kleckner's December 31, 2025, entries.

BE20.8 (LO 2, 4) Cardinal Company is negotiating to lease a piece of equipment to MTBA, Inc. MTBA requests that the lease be for 9 years. The equipment has a useful life of 10 years. Cardinal wants a guarantee that the residual value of the equipment at the end of the lease is at least $5,000. MTBA agrees to guarantee a residual value of this amount though it expects the residual value of the equipment to be only $2,500 at the end of the lease term. If the fair value of the equipment at lease commencement is $70,000, what would be the amount of the annual rental payments Cardinal demands of MTBA, assuming each payment will be made at the beginning of each year and Cardinal wishes to earn a rate of return on the lease of 8%?

BE20.9 (LO 1, 4) Mequon Inc. wishes to lease machinery to Thiensville Company. Thiensville wants the machinery for 4 years, although it has a useful life of 10 years. The machinery has a fair value at the commencement of the lease of $47,000, and Mequon expects the machinery to have a residual value at the end of the lease term of $30,000. However, Thiensville does not guarantee any part of the residual value. Thiensville does expect that the residual value will be $45,000 instead of $30,000. What would be the amount of the annual rental payments Mequon demands of Thiensville, assuming each payment will be made at the end of each year and Mequon wishes to earn a rate of return on the lease of 6%?

BE20.10 (LO 2) Assume that **IBM** leased equipment that was carried at a cost of $120,000 to Swander Company. The term of the lease is 6 years beginning December 31, 2024, with equal rental payments of $30,044 beginning December 31, 2024. The fair value of the equipment at commencement of the lease is $150,001. The equipment has a useful life of 6 years with no salvage value. The lease has an implicit interest rate of 8%, no bargain purchase option, and no transfer of title. Collectibility of lease payments for IBM is probable. Prepare IBM's December 31, 2024, journal entries at commencement of the lease.

BE20.11 (LO 2) Use the information for **IBM** from BE20.10. Assume the sales-type lease was recorded at a present value of $150,001. Prepare IBM's December 31, 2025, entry to record the lease transaction with Swander Company.

BE20.12 (LO 2) Geiberger Corporation manufactures drones. On December 31, 2024, it leased to Althaus Company a drone that had cost $120,000 to manufacture. The lease agreement covers the 5-year useful life of the drone and requires five equal annual rentals of $40,800 payable each December 31, beginning December 31, 2024. An interest rate of 8% is implicit in the lease agreement. Collectibility of the rentals is probable. Prepare Geiberger's December 31, 2024, journal entries.

BE20.13 (LO 2) Use the information for Geiberger Corporation from BE20.12, except assume the collectibility of the rentals is not probable. Prepare any journal entries for Geiberger on December 31, 2024.

BE20.14 (LO 2) Kubby Company specializes in leasing large storage units to other businesses. Kubby entered a contract to lease a storage unit to Riskey, Inc. for 4 years when that particular storage unit had a remaining useful life of 5 years. The fair value of the unit was $10,000 at the commencement of the lease on January 1, 2025. The present value of the five equal rental payments of $2,507 at the start of each year, plus the present value of a guaranteed residual value of $1,000, equals the fair value of $10,000, Kubby's implicit rate of return on the lease of 6%. The following is a correct, complete amortization schedule created by Kubby.

Date	Lease Payment	Interest (6%) on Outstanding Lease Receivable	Reduction of Lease Receivable	Balance of Lease Receivable
1/1/25				$10,000
1/1/25	$ 2,507		$ 2,507	7,493
1/1/26	2,507	$ 450	2,057	5,436
1/1/27	2,507	326	2,181	3,255
1/1/28	2,507	195	2,312	943
12/31/28	1,000	57	943	0
	$11,028	$1,028	$10,000	

Given the above schedule, make the appropriate entries at December 31, 2028, to record the accrual of interest and the return of the storage unit to Kubby (assuming the unit is returned on December 31, 2028, at the expected and guaranteed residual value of $1,000).

BE20.15 (LO 3) LeBron James (LBJ) Corporation agrees on January 1, 2025, to lease equipment from Cavaliers, Inc. for 3 years. The lease calls for annual lease payments of $23,000 at the beginning of each year. The lease does not transfer ownership, nor does it contain a bargain purchase option, and is not a specialized asset. In addition, the useful life of the equipment is 10 years, and the present value of the lease payments is less than 90% of the fair value of the equipment. Prepare LBJ's journal entries on January 1, 2025 (commencement of the operating lease), and on December 31, 2025. Assume the implicit rate used by the lessor is unknown, and LBJ's incremental borrowing rate is 6%.

BE20.16 (LO 3) Kingston Corporation leases equipment from Falls Company on January 1, 2025. The lease agreement does not transfer ownership, contain a bargain purchase option, and is not a specialized asset. It covers 3 years of the equipment's 8-year useful life, and the present value of the lease payments is less than 90% of the fair value of the asset leased. Prepare Kingston's journal entries on January 1, 2025, and December 31, 2025. Assume the annual lease payment is $35,000 at the beginning of each year, and Kingston's incremental borrowing rate is 6%, which is the same as the lessor's implicit rate.

BE20.17 (LO 3) Use the information for Kingston Corporation from BE20.16. Prepare all the necessary journal entries for Falls Company (the lessor) for 2025, assuming the equipment is carried at a cost of $200,000.

BE20.18 (LO 3) Rodgers Corporation agrees on January 1, 2025, to lease equipment from Packers, Inc. for 3 years. The lease calls for annual lease payments of $12,000 at the beginning of each year. The lease does not transfer ownership, contain a bargain purchase option, and is not a specialized asset. In addition, the economic life of the equipment is 10 years, and the present value of the lease payments is less than 90% of the fair value of the equipment. Prepare Rodgers' journal entries on January 1, 2025 (commencement of the operating lease), and on December 31, 2025. Assume the implicit rate used by the lessor is 8%, and this is known to Rodgers.

BE20.19 (LO 3) Use the information for Rodgers Corporation and Packers, Inc. from BE20.18. Assume that for Packers, Inc., the lessor, the collectibility of the lease payments is probable, and the fair value and cost of the equipment is $60,000. Prepare Packers' 2025 journal entries, assuming the company uses straight-line depreciation and no salvage value.

BE20.20 (LO 4) On December 31, 2024, Escapee Company leased machinery from Terminator Corporation for an agreed-upon lease term of 3 years. Escapee agreed to make annual lease payments of $17,000, beginning on December 31, 2024. The expected residual value of the machinery at the end of the lease

term is $9,000, though Escapee does not guarantee any residual value to Terminator. What amount will Escapee record as its lease liability on December 31, 2024, if its incremental borrowing rate is 6% and the implicit rate of the lease is unknown?

BE20.21 (LO 4) Use the information for Escapee Company from BE20.20. Assume the same facts, except Escapee guarantees a residual value of $9,000 at the end of the lease term, which equals the expected residual value of the machinery. (a) Does this change your answer from BE20.20? (b) What if the expected residual value at the end of the lease term is $5,000 and Escapee guarantees a residual of $9,000?

BE20.22 (LO 4) Indiana Jones Corporation enters into a 6-year lease of equipment on December 31, 2024, which requires six annual payments of $40,000 each, beginning December 31, 2024. In addition, Indiana Jones guarantees the lessor a residual value of $20,000 at the end of the lease. However, Indiana Jones believes it is probable that the expected residual value at the end of the lease term will be $10,000. The equipment has a useful life of 6 years. Prepare Indiana Jones' December 31, 2024, journal entries, assuming the implicit rate of the lease is 6% and this is known to Indiana Jones.

BE20.23 (LO 4) Use the information for Indiana Jones Corporation from BE20.22. Assume that for Lost Ark Company, the lessor, collectibility of lease payments is probable and the carrying amount of the equipment is $180,000. Prepare Lost Ark's 2024 and 2025 journal entries.

BE20.24 (LO 4) Forrest, Inc. has entered an agreement to lease an old warehouse with a useful life of 5 years and a fair value of $20,000 from United Corporation. The agreement stipulates the following.

- Rental payments of $4,638 are to be made at the start of each year of the 5-year lease. No residual value is expected at the end of the lease.
- Forrest must reimburse United each year for any real estate taxes incurred for the year. Last year, the cost of real estate taxes was $700, though these costs vary from year to year.
- Forrest must make a payment of $500 with the rental payment each period to cover the insurance United has on the warehouse.
- Forrest paid legal fees of $1,000 in executing the lease.

Assuming Forrest's incremental borrowing rate is 8% and the rate implicit in the lease is unknown, prepare the journal entry to record the initial lease liability and right-of-use asset for Forrest.

BE20.25 (LO 4) Bucky Corporation entered into an operating lease agreement to lease equipment from Badger, Inc. on January 1, 2025. The lease calls for annual lease payments of $30,000, beginning on January 1, for each of the 3 years of the lease. In addition, Badger will pay Bucky $5,000 as a cash incentive for entering the lease by January 1, 2025. In relation to the lease agreement, Bucky incurred the following costs.

Salaries of employees involved in the investigation of the lease	$2,000
Lease document preparation costs incurred after execution of the lease	500

Bucky's incremental borrowing rate is 8%. If the value of the lease liability is $83,498, what amount will Bucky record as the value of the right-of-use asset on January 1, 2025, at commencement of the operating lease?

BE20.26 (LO 4) Homestead Corporation entered into an operating lease to lease equipment from Highlander, Inc. on January 1, 2025. The lease calls for annual lease payments of $10,000, beginning on December 31, for each of the 5 years of the lease. In addition, Highlander, Inc. will pay Homestead Corporation $2,000 as a cash incentive for entering the lease by December 31. In relation to the lease agreement, Homestead incurred the following costs.

Commissions for selling agents	$ 900
Internal engineering costs	500
Legal fees resulting from the execution of the lease	3,000

Homestead's incremental borrowing rate is 6%. If the value of the lease liability is $44,651, what amount will Homestead record as the value of the right-of-use asset on January 1, 2025, at commencement of the operating lease?

BE20.27 (LO 4) Debbink Co. leased machinery from Young, Inc. on January 1, 2025. The lease term was for 8 years, with equal annual rental payments of $5,300 at the beginning of each year. In addition, the lease provides an option to purchase the machinery at the end of the lease term for $2,000, which Debbink is reasonably certain it will exercise as it believes the fair value of the machinery will be at least $6,000. The machinery has a useful life of 10 years and a fair value of $36,000. The implicit rate of the lease is not known to Debbink. Debbink's incremental borrowing rate is 8%. Prepare Debbink's 2025 journal entries.

BE20.28 (LO 4) Brent Corporation owns equipment that cost $80,000 and has a useful life of 8 years with no salvage value. On January 1, 2025, Brent leases the equipment to Havaci Inc. for one year for

one rental payment of $15,000 on January 1. Assuming Havaci (lessee) elects to use the short-term lease exception, prepare Havaci's 2025 journal entries.

***BE20.29 (LO 5)** On January 1, 2025, Irwin Animation sold a truck to Peete Finance for $35,000 and immediately leased it back. The truck was carried on Irwin's books at $28,000. The term of the lease is 3 years, there is no bargain purchase option, and title does not transfer to Irwin at lease-end. The lease requires three equal rental payments of $8,696 at the end of each year (first payment on January 1, 2026). The appropriate rate of interest is 6%, the truck has a useful life of 5 years, and the residual value at the end of the lease term is expected to be $14,000, none of which is guaranteed. Prepare Irwin's 2025 journal entries.

***BE20.30 (LO 5)** Assume the same facts as BE20.29, except the lease term is now 5 years and the five annual rental payments are $8,309, with no expected residual value at the end of the lease term. Prepare Irwin's 2025 journal entries assuming these new facts.

***BE20.31 (LO 6)** Bulls, Inc. leases a piece of equipment to Bucks Company on January 1, 2025. The contract stipulates a lease term of 5 years, with equal annual rental payments of $4,523 at the end of each year. Ownership does not transfer at the end of the lease term, there is no bargain purchase option, and the asset is not of a specialized nature. The asset has a fair value of $30,000, a book value of $27,000, and a useful life of 8 years. At the end of the lease term, Bulls expects the residual value of the asset to be $12,000, and this amount is guaranteed by a third party. Assuming Bulls wants to earn a 4% return on the lease and collectibility of the lease payments is probable, record its journal entry at the commencement of the lease on January 1, 2025.

***BE20.32 (LO 6)** Use the information for Bulls, Inc. from BE20.31. Assume that the lease receivable is $30,000, deferred gross profit is $3,000, and the rate of return to amortize the net lease receivable to zero is 7.11%. Prepare Bulls' journal entry at the end of the first year of the lease to record the receipt of the first lease payment.

Exercises

E20.1 (LO 1, 4) (Lessee Entries; Finance Lease with No Residual Value) Joe's Journeys enters into an agreement with Traveler Inc. to lease a car on December 31, 2024. The following information relates to this agreement.

1. The term of the non-cancelable lease is 3 years with no renewal or bargain purchase option. The remaining economic life of the car is 3 years, and it is expected to have no residual value at the end of the lease term.
2. The fair value of the car was $15,000 at commencement of the lease.
3. Annual payments are required to be made on December 31 at the end of each year of the lease, beginning December 31, 2025. The first payment is to be of an amount of $5,552.82, with each payment increasing by a constant rate of 5% from the previous payment (i.e., the second payment will be $5,830.46 and the third and final payment will be $6,121.98).
4. Joe's Journeys' incremental borrowing rate is 8%. The rate implicit in the lease is unknown.
5. Joe's Journeys uses straight-line depreciation for all similar cars.

Instructions

a. Prepare Joe's Journeys' journal entries for 2024, 2025, and 2026.

b. Assume, instead of a constant rate of increase, the annual lease payments will increase according to the Consumer Price Index (CPI). At its current level, the CPI stipulates that the first rental payment should be $5,820. What would be the impact on the journal entries made by Joe's Journeys at commencement of the lease, as well as for subsequent years?

E20.2 (LO 2, 4) (Lessee Entries; Finance Lease with Unguaranteed Residual Value) On December 31, 2024, Burke Corporation signed a 5-year, non-cancelable lease for a machine. The terms of the lease called for Burke to make annual payments of $8,668 at the beginning of each year, starting December 31, 2024. The machine has an estimated useful life of 6 years and a $5,000 unguaranteed residual value. The machine reverts back to the lessor at the end of the lease term. Burke uses the straight-line method of depreciation for all of its plant assets. Burke's incremental borrowing rate is 5%, and the lessor's implicit rate is unknown.

Instructions

a. What type of lease is this? Explain.

b. Compute the present value of the lease payments.

c. Prepare all necessary journal entries for Burke for this lease through December 31, 2025.

E20.3 (LO 2, 4) (Lessee Computations and Entries; Finance Lease with Guaranteed Residual Value) Delaney Company leases an automobile with a fair value of $10,000 from Simon Motors, Inc., on the following terms.

1. Non-cancelable term of 50 months.
2. Rental of $200 per month (at the beginning of each month). (The present value at 0.5% per month is $8,873.)
3. Delaney guarantees a residual value of $1,180 (the present value at 0.5% per month is $920). Delaney expects the probable residual value to be $1,180 at the end of the lease term.
4. Estimated economic life of the automobile is 60 months.
5. Delaney's incremental borrowing rate is 6% a year (0.5% a month). Simon's implicit rate is unknown.

Instructions

a. What is the nature of this lease to Delaney?

b. What is the present value of the lease payments to determine the lease liability?

c. Based on the original fact pattern, record the lease on Delaney's books at the date of commencement.

d. Record the first month's lease payment (at commencement of the lease).

e. Record the second month's lease payment.

f. Record the first month's amortization on Delaney's books (assume straight-line).

g. Suppose that instead of $1,180, Delaney expects the residual value to be only $500 (the guaranteed amount is still $1,180). How does the calculation of the present value of the lease payments change from part b?

E20.4 (LO 2, 4) Excel (Lessee Entries; Finance Lease and Unguaranteed Residual Value) Assume that on December 31, 2024, **Kimberly-Clark Corp.** signs a 10-year, non-cancelable lease agreement to lease a storage building from Sheffield Storage Company. The following information pertains to this lease agreement.

1. The agreement requires equal rental payments of $71,830 beginning on December 31, 2024.
2. The fair value of the building on December 31, 2024, is $525,176.
3. The building has an estimated economic life of 12 years, a guaranteed residual value of $10,000, and an expected residual value of $7,000. Kimberly-Clark depreciates similar buildings on the straight-line method.
4. The lease is nonrenewable. At the termination of the lease, the building reverts to the lessor.
5. Kimberly-Clark's incremental borrowing rate is 8% per year. The lessor's implicit rate is not known by Kimberly-Clark.

Instructions

a. Prepare the journal entries on the lessee's books to reflect the signing of the lease agreement and to record the payments and expenses related to this lease for the years 2024, 2025, and 2026. Kimberly-Clark's fiscal year-end is December 31.

b. Suppose the same facts as above, except that Kimberly-Clark incurred legal fees resulting from the execution of the lease of $5,000, and received a lease incentive from Sheffield to enter the lease of $1,000. How would the initial measurement of the lease liability and right-of-use asset be affected under this situation?

c. Suppose that in addition to the $71,830 annual rental payments, Kimberly-Clark is also required to pay $5,000 for insurance costs each year on the building directly to the lessor, Sheffield Storage. How would this executory cost affect the initial measurement of the lease liability and right-of-use asset?

d. Return to the original facts in the problem. Now suppose that, at the end of the lease term, Kimberly-Clark took good care of the asset and Sheffield agrees that the fair value of the asset is actually $10,000. Record the entry for Kimberly-Clark at the end of the lease to return control of the storage building to Sheffield (assuming the accrual of interest on the lease liability has already been made).

E20.5 (LO 2, 4) (Computation of Rental; Journal Entries for Lessor) Morgan Leasing Company signs an agreement on January 1, 2025, to lease equipment to Cole Company. The following information relates to this agreement.

1. The term of the non-cancelable lease is 6 years with no renewal option. The equipment has an estimated economic life of 6 years.
2. The cost of the asset to the lessor is $245,000. The fair value of the asset at January 1, 2025, is $245,000.
3. The asset will revert to the lessor at the end of the lease term, at which time the asset is expected to have a residual value of $24,335, none of which is guaranteed.
4. The agreement requires equal annual rental payments, beginning on January 1, 2025.
5. Collectibility of the lease payments by Morgan is probable.

Instructions

(Round all numbers to the nearest cent.)

a. Assuming the lessor desires an 8% rate of return on its investment, calculate the amount of the annual rental payment required. (Round to the nearest dollar.)
b. Prepare an amortization schedule that is suitable for the lessor for the lease term.
c. Prepare all of the journal entries for the lessor for 2025 and 2026 to record the lease agreement, the receipt of lease payments, and the recognition of revenue. Assume the lessor's annual accounting period ends on December 31, and it does not use reversing entries.

E20.6 (LO 2, 4) (Lessor Entries; Sales-Type Lease with Option to Purchase) Castle Leasing Company signs a lease agreement on January 1, 2025, to lease electronic equipment to Jan Way Company. The term of the non-cancelable lease is 2 years, and payments are required at the end of each year. The following information relates to this agreement.

1. Jan Way has the option to purchase the equipment for $16,000 upon termination of the lease. It is not reasonably certain that Jan Way will exercise this option.
2. The equipment has a cost of $120,000 and fair value of $160,000 to Castle Leasing. The useful economic life is 2 years, with a residual value of $16,000.
3. Castle Leasing desires to earn a return of 5% on its investment.
4. Collectibility of the payments by Castle Leasing is probable.

Instructions

a. Prepare the journal entries on the books of Castle Leasing to record the payments received under the lease and to recognize income for the years 2025 and 2026.
b. Assuming that Jan Way exercises its option to purchase the equipment on December 31, 2026, prepare the journal entry to record the sale on Castle Leasing's books.

E20.7 (LO 2, 4) (Type of Lease; Amortization Schedule) Macinski Leasing Company leases a new machine to Sharrer Corporation. The machine has a cost of $70,000 and fair value of $95,000. Under the 3-year, non-cancelable contract, Sharrer will receive title to the machine at the end of the lease. The machine has a 3-year useful life and no residual value. The lease was signed on January 1, 2025. Macinski expects to earn an 8% return on its investment, and this implicit rate is known by Sharrer. The annual rentals are payable on each December 31, beginning December 31, 2025.

Instructions

a. Discuss the nature of the lease arrangement and the accounting method that each party to the lease should apply.
b. Prepare an amortization schedule that would be suitable for both the lessor and the lessee and that covers all the years involved.
c. Prepare the journal entry at commencement of the lease for Macinski.
d. Prepare the journal entry at commencement of the lease for Sharrer.
e. Prepare the journal entry at commencement of the lease for Sharrer, assuming (1) Sharrer does not know Macinski's implicit rate (Sharrer's incremental borrowing rate is 9%), and (2) Sharrer incurs initial directs costs of $10,000.

E20.8 (LO 2, 4) Excel (Lessor Entries; Sales-Type Lease) Crosley Company, a machinery dealer, leased a machine to Dexter Corporation on January 1, 2025. The lease is for an 8-year period and requires equal annual payments of $35,004 at the beginning of each year. The first payment is received on January 1, 2025. Crosley had purchased the machine during 2024 for $160,000. Collectibility of lease payments by Crosley is probable. Crosley set the annual rental to ensure a 6% rate of return. The machine has an economic life of 10 years with no residual value and reverts to Crosley at the termination of the lease.

Instructions

a. Compute the amount of the lease receivable.

b. Prepare all necessary journal entries for Crosley for 2025.

c. Suppose the collectibility of the lease payments was not probable for Crosley. Prepare all necessary journal entries for the company in 2025.

d. Suppose at the end of the lease term, Crosley receives the asset and determines that it actually has a fair value of $1,000 instead of the anticipated residual value of $0. Record the entry to recognize the receipt of the asset for Crosley at the end of the lease term.

E20.9 (LO 2, 4) (Lessee Entries; Initial Direct Costs) Use the information for Crosley Company in E20.8. Assume that Dexter Corporation does not know the rate implicit in the lease used by Crosley, and Dexter's incremental borrowing rate is 8%. In addition, assume that Dexter incurs initial direct costs of $15,000.

Instructions

a. Compute the amount of the lease liability and right-of-use asset for Dexter.

b. Prepare all necessary journal entries for Dexter for 2025.

E20.10 (LO 2, 4) (Lessee Entries with Bargain Purchase Option) The following facts pertain to a non-cancelable lease agreement between Mooney Leasing Company and Rode Company, a lessee.

Commencement date	May 1, 2025
Annual lease payment due at the beginning of each year, beginning with May 1, 2025	$20,471.94
Bargain purchase option price at end of lease term	$ 4,000.00
Lease term	5 years
Economic life of leased equipment	10 years
Lessor's cost	$65,000.00
Fair value of asset at May 1, 2025	$91,000.00
Lessor's implicit rate	8%
Lessee's incremental borrowing rate	8%

The collectibility of the lease payments by Mooney is probable.

Instructions

(Round all numbers to the nearest cent.)

a. Discuss the nature of this lease to Rode.

b. Discuss the nature of this lease to Mooney.

c. Prepare a lease amortization schedule for Rode for the 5-year lease term.

d. Prepare the journal entries on the lessee's books to reflect the signing of the lease agreement and to record the payments and expenses related to this lease for the years 2025 and 2026. Rode's annual accounting period ends on December 31. Reversing entries are used by Rode.

E20.11 (LO 2, 4) (Lessor Entries with Bargain Purchase Option) A lease agreement between Mooney Leasing Company and Rode Company is described in E20.10.

Instructions

Refer to the data in E20.10 and do the following for the lessor. (Round all numbers to the nearest cent.)

a. Compute the amount of the lease receivable at commencement of the lease.

b. Prepare a lease amortization schedule for Mooney for the 5-year lease term.

c. Prepare the journal entries to reflect the signing of the lease agreement and to record the receipts and income related to this lease for the years 2025 and 2026. The lessor's accounting period ends on December 31. Reversing entries are not used by Mooney.

d. Suppose the collectibility of the lease payments was not probable for Mooney. Prepare all necessary journal entries for the company in 2025.

E20.12 (LO 2, 4) (Lessee-Lessor Entries; Sales-Type Lease with Bargain Purchase Option) On January 1, 2025, Bensen Company leased equipment to Flynn Corporation. The following information pertains to this lease.

1. The term of the non-cancelable lease is 6 years. At the end of the lease term, Flynn has the option to purchase the equipment for $1,000, while the expected residual value at the end of the lease is $5,000.

2. Equal rental payments are due on January 1 of each year, beginning in 2025.

3. The fair value of the equipment on January 1, 2025, is $150,000, and its cost is $120,000.

4. The equipment has an economic life of 8 years. Flynn depreciates all of its equipment on a straight-line basis.
5. Bensen set the annual rental to ensure a 5% rate of return. Flynn's incremental borrowing rate is 6%, and the implicit rate of the lessor is unknown.
6. Collectibility of lease payments by the lessor is probable.

Instructions

(Both the lessor and the lessee's accounting periods end on December 31.)

a. Discuss the nature of this lease to Bensen and Flynn.

b. Calculate the amount of the annual rental payment.

c. Prepare all the necessary journal entries for Bensen for 2025.

d. Suppose the collectibility of the lease payments was not probable for Bensen. Prepare all necessary journal entries for the company in 2025.

e. Prepare all the necessary journal entries for Flynn for 2025.

f. Discuss the effect on the journal entry for Flynn at lease commencement, assuming initial direct costs of $2,000 are incurred by Flynn to negotiate the lease.

E20.13 (LO 2, 4) (Lessee-Lessor Entries; Sales-Type Lease; Guaranteed Residual Value) Phelps Company leases a building to Walsh, Inc. on January 1, 2025. The following facts pertain to the lease agreement.

1. The lease term is 5 years, with equal annual rental payments of $4,703 at the beginning of each year.
2. Ownership does not transfer at the end of the lease term, there is no bargain purchase option, and the asset is not of a specialized nature.
3. The building has a fair value of $23,000, a book value to Phelps of $16,000, and a useful life of 6 years.
4. At the end of the lease term, Phelps and Walsh expect there to be an unguaranteed residual value of $4,000.
5. Phelps wants to earn a return of 8% on the lease, and collectibility of the payments is probable. This rate is known by Walsh.

Instructions

a. How would Phelps (lessor) and Walsh (lessee) classify this lease? How would Phelps initially measure the lease receivable, and how would Walsh initially measure the lease liability and right-of-use asset?

b. Using the original facts of the lease, show the journal entries to be made by both Phelps and Walsh in 2025.

c. Suppose the entire expected residual value of $4,000 is guaranteed by Walsh. How will this change your answer to part a?

d. Assume the same facts as part c, except the expected residual value is $3,000. Does your answer change?

E20.14 (LO 2, 4) (Lessee Entries; Initial Direct Costs) Use the information for the Phelps/Walsh lease in E20.13, except that Walsh was unaware of the implicit rate used in the lease by Phelps and has an incremental borrowing rate of 9%.

Instructions

How would your answer to E20.13(a) change?

E20.15 (LO 2, 4) (Amortization Schedule and Journal Entries for Lessee) Laura Leasing Company signs an agreement on January 1, 2025, to lease equipment to Plote Company. The following information relates to this agreement.

1. The term of the non-cancelable lease is 3 years with no renewal option. The equipment has an estimated economic life of 5 years.
2. The fair value of the asset at January 1, 2025, is $80,000.
3. The asset will revert to the lessor at the end of the lease term, at which time the asset is expected to have a residual value of $7,000, none of which is guaranteed.
4. The agreement requires equal annual rental payments of $25,562.96 to the lessor, beginning on January 1, 2025.
5. The lessee's incremental borrowing rate is 5%. The lessor's implicit rate is 4% and is unknown to the lessee.
6. Plote uses the straight-line depreciation method for all equipment.

Instructions

(Round all numbers to the nearest cent.)

a. Prepare an amortization schedule that would be suitable for the lessee for the lease term.

b. Prepare all of the journal entries for the lessee for 2025 and 2026 to record the lease agreement, the lease payments, and all expenses related to this lease. Assume the lessee's annual accounting period ends on December 31.

E20.16 (LO 3, 4) (Amortization Schedule and Journal Entries for Lessee) Use the information pertaining to Laura Leasing Company and Plote Company from E20.15. Assume that the expected residual value at the end of the lease is $10,000, such that the payments are $24,638.87.

Instructions

Prepare all of the journal entries for the lessee for 2025 to record the lease agreement, the lease payments, and all expenses related to this lease. Assume the lessee's annual accounting period ends on December 31.

E20.17 (LO 3, 4) (Accounting for an Operating Lease) On January 1, 2025, Nelson Co. leased a building to Wise Inc. The relevant information related to the lease is as follows.

1. The lease arrangement is for 10 years. The building is expected to have a residual value at the end of the lease of $3,500,000 (unguaranteed).
2. The leased building has a cost of $4,000,000 and was purchased for cash on January 1, 2025.
3. The building is depreciated on a straight-line basis. Its estimated economic life is 50 years with no salvage value.
4. Lease payments are $275,000 per year and are made at the beginning of the year.
5. Wise has an incremental borrowing rate of 8%, and the rate implicit in the lease is unknown to Wise.
6. Both the lessor and the lessee are on a calendar-year basis.

Instructions

a. Prepare the journal entries that Nelson should make in 2025.

b. Prepare the journal entries that Wise should make in 2025.

c. If Wise paid $30,000 to a real estate broker on January 1, 2025, as a fee for finding the lessor, what is the initial measurement of the right-of-use asset? Explain.

E20.18 (LO 3, 4) (Accounting for an Operating Lease) On January 1, 2025, a machine was purchased for $900,000 by Young Co. The machine is expected to have an 8-year life with no salvage value. It is to be depreciated on a straight-line basis. The machine was leased to St. Leger Inc. for 3 years on January 1, 2025, with annual rent payments of $150,955 due at the beginning of each year, starting January 1, 2025. The machine is expected to have a residual value at the end of the lease term of $562,500, though this amount is unguaranteed.

Instructions

a. How much should Young report as income before income tax on this lease for 2025?

b. Record the journal entries St. Leger would record for 2025 on this lease, assuming its incremental borrowing rate is 6% and the rate implicit in the lease is unknown.

c. Suppose the lease was only for one year (only one payment of the same amount at commencement of the lease), with a renewal option at market rates at the end of the lease, and St. Leger elects to use the short-term lease exception. Record the journal entries St. Leger would record for 2025 on this lease.

E20.19 (LO 3, 4) (Accounting for an Operating Lease) Kaluzniak Corporation leased equipment to Moeller, Inc. on January 1, 2025. The lease agreement called for annual rental payments of $1,137 at the beginning of each year of the 3-year lease. The equipment has an economic useful life of 7 years, a fair value of $7,000, a book value of $5,000, and Kaluzniak expects a residual value of $4,500 at the end of the lease term. Kaluzniak set the lease payments with the intent of earning a 6% return, though Moeller is unaware of the rate implicit in the lease and has an incremental borrowing rate of 8%. There is no bargain purchase option, ownership of the lease does not transfer at the end of the lease term, and the asset is not of a specialized nature.

Instructions

a. Describe the nature of the lease to both Kaluzniak and Moeller.

b. Prepare all necessary journal entries for Moeller in 2025. Moeller uses straight-line depreciation.

c. How would the measurement of the lease liability and right-of-use asset be affected if, as a result of the lease contract, Moeller was also required to pay $500 in commissions, prepay $750 in addition to the first rental payment, and pay $200 of insurance each year?

d. Suppose, instead of a 3-year lease term, Moeller and Kaluzniak agree to a one-year lease with a payment of $1,137 at the start of the lease. Prepare all necessary journal entries for Moeller in 2025.

E20.20 (LO 3, 4) (Accounting for an Operating Lease) Use the information for Kaluzniak Corporation and Moeller, Inc. from E20.19.

Instructions

a. Explain (and show calculations) how Kaluzniak arrived at the amount of the rental payments used in the lease agreement.

b. Prepare the entries for Kaluzniak for 2025.

c. How would Kaluzniak's accounting in part a change if it incurred legal fees of $700 to execute the lease documents and $500 in advertising expenses for the year in connection with the lease?

E20.21 (LO 3, 4) (Accounting for an Operating Lease) Rauch Incorporated leases a piece of equipment to Donahue Corporation on January 1, 2025. The lease agreement called for annual rental payments of $4,892 at the beginning of each year of the 4-year lease. The equipment has an economic useful life of 6 years, a fair value of $25,000, a book value of $20,000, and both parties expect a residual value of $8,250 at the end of the lease term, though this amount is not guaranteed. Rauch set the lease payments with the intent of earning a 5% return, and Donahue is aware of this rate. There is no bargain purchase option, ownership of the lease does not transfer at the end of the lease term, and the asset is not of a specialized nature.

Instructions

a. Describe the nature of the lease to both Rauch and Donahue.

b. Prepare the lease amortization schedule(s) for Donahue for all 4 years of the lease.

c. Prepare the journal entries for Donahue for 2025 and 2026.

d. Suppose Donahue incurs initial direct costs of $750 related to the lease. Prepare the journal entries for 2025.

e. Explain how a fully guaranteed residual value by Donahue would change the accounting for the company. The expected residual value is $9,000.

f. Explain how a bargain renewal option for one extra year at the end of the lease term would change the accounting of the lease for Donahue.

E20.22 (LO 3, 4) (Accounting for an Operating Lease) Use the information for Rauch Incorporated and Donahue Corporation from E20.21.

Instructions

a. Explain (and show calculations) how Rauch arrived at the amount of the rental payments used in the lease agreement.

b. Prepare the entries for Rauch for 2025.

c. Suppose that instead of $8,250, Rauch expects the residual value at the end of the lease to be $5,000, but Donahue agrees to guarantee a residual value of $8,250. All other facts being equal, how would Rauch change the amount of the annual rental payments, if at all?

d. Explain how a fully guaranteed residual value by Donahue would change the accounting for Rauch, the lessor.

e. Explain how a bargain renewal option for one extra year at the end of the lease term would change the accounting of the lease for Rauch, the lessor.

***E20.23 (LO 5) (Sale-Leaseback)** Assume that on January 1, 2025, **Elmer's Restaurants** sells a computer system to Liquidity Finance Co. for $680,000 and immediately leases back the computer system. The relevant information is as follows.

1. The computer was carried on Elmer's books at a value of $600,000.
2. The term of the non-cancelable lease is 3 years; title will not transfer to Elmer's, and the expected residual value at the end of the lease is $450,000, all of which is unguaranteed.
3. The lease agreement requires equal rental payments of $115,970 at the beginning of each year.
4. The incremental borrowing rate for Elmer's is 8%. Elmer's is aware that Liquidity Finance set the annual rental to ensure a rate of return of 8%.
5. The computer has a fair value of $680,000 on January 1, 2025, and an estimated economic life of 10 years.

Instructions

Prepare the journal entries for both the lessee and the lessor for 2025 to record the sale and leaseback agreement.

***E20.24 (LO 5) (Lessee-Lessor, Sale-Leaseback)** Respond to the requirements in each situation.

Instructions

a. On January 1, 2025, Zarle Inc. sold computer equipment to Daniell Co. The sales price of the equipment was $520,000 and its carrying amount is $400,000. Record any journal entries necessary for Zarle from the sale of the computer equipment in 2025.

b. Use the information from part a. Assume that, on the same day the sale occurred, Zarle enters into an agreement to lease the equipment from Daniell for 10 years with annual lease payments of $67,342.42 at the end of each year, beginning on December 31, 2025. If Zarle has an incremental borrowing rate of 5% and the equipment has an economic useful life of 10 years, record any journal entries necessary for Zarle from the sale and leaseback of computer equipment in 2025.

c. Use the information from part b. Now, instead of 10 years, the lease term is only 3 years with annual lease payments of $67,342.42 at the beginning of each year. Record any journal entries necessary for Zarle from the sale and leaseback of computer equipment in 2025.

***E20.25 (LO 6) (Direct Financing Lease)** Giannis Corporation leases a building to Jabari, Inc. on January 1, 2025. The following facts pertain to the lease agreement.

1. The lease term is 10 years with equal annual rental payments of $3,449 at the end of each year.

2. Ownership does not transfer at the end of the lease term, there is no bargain purchase option, and the asset is not of a specialized nature.

3. The building has a fair value of $34,000, a book value to Giannis of $22,000, and a useful life of 15 years.

4. At the end of the lease term, Giannis and Jabari expect the residual value of the building to be $12,000, and this amount is guaranteed by Money, Inc., a third party.

5. Giannis wants to earn a 5% return on the lease, and collectibility of the payments is probable.

Instructions

a. Describe the nature of this lease to both Giannis and Jabari.

b. Assume the present value of lease payments and third-party guarantee is $34,000 and the rate of return to amortize the net lease receivable to zero is 13.24%. Prepare the amortization schedules Giannis would use to amortize the net lease receivable to zero.

c. Prepare the journal entries to record the entries for Giannis for 2025 and 2026.

d. Prepare the journal entries for Jabari (the lessee) for 2025 and 2026, assuming the rate implicit in the lease is known to Jabari.

e. Suppose the leased asset had a shorter economic life of 8 years, the lease agreement was only for 5 years, and the residual value of $12,000 guaranteed by Money, Inc. remained the same. Would the rate of return required to amortize the net lease receivable to zero increase, decrease, or stay the same? Explain.

f. Suppose, instead of Money, Inc., Jabari guarantees the residual value itself. How would this affect the classification of this lease agreement for both Giannis and Jabari? Describe the impact that any change in classification would have on revenue recognition for Giannis.

Problems

P20.1 (LO 2, 4) (Lessee Entries, Finance Lease) The following facts pertain to a non-cancelable lease agreement between Faldo Leasing Company and Vance Company, a lessee.

Commencement date	January 1, 2025
Annual lease payment due at the beginning of each year, beginning with January 1, 2025	$113,864
Residual value of equipment at end of lease term, guaranteed by the lessee	$50,000
Expected residual value of equipment at end of lease term	$45,000
Lease term	6 years
Economic life of leased equipment	6 years
Fair value of asset at January 1, 2025	$600,000
Lessor's implicit rate	8%
Lessee's incremental borrowing rate	8%

The asset will revert to the lessor at the end of the lease term. The lessee uses the straight-line amortization for all leased equipment.

Instructions

a. Prepare an amortization schedule that would be suitable for the lessee for the lease term.

b. Prepare all of the journal entries for the lessee for 2025 and 2026 to record the lease agreement, the lease payments, and all expenses related to this lease. Assume the lessee's annual accounting period ends on December 31.

c. Suppose Vance received a lease incentive of $5,000 from Faldo Leasing to enter the lease. How would the initial measurement of the lease liability and right-of-use asset be affected? What if Vance prepaid rent of $5,000 to Faldo?

P20.2 (LO 2, 4) (Lessee Entries and Balance Sheet Presentation, Finance Lease) On January 1, 2025, Cage Company contracts to lease equipment for 5 years, agreeing to make a payment of $120,987 at the beginning of each year, starting January 1, 2025. The leased equipment is to be capitalized at $550,000. The asset is to be amortized on a double-declining-balance basis, and the obligation is to be reduced on an effective-interest basis. Cage's incremental borrowing rate is 6%, and the implicit rate in the lease is 5%, which is known by Cage. Title to the equipment transfers to Cage at the end of the lease. The asset has an estimated useful life of 5 years and no residual value.

Instructions

a. Explain the probable relationship of the $550,000 amount to the lease arrangement.

b. Prepare the journal entry or entries that Cage should record on January 1, 2025.

c. Prepare the journal entries to record amortization of the leased asset and interest expense for the year 2025.

d. Prepare the journal entry to record the lease payment of January 1, 2026, assuming reversing entries are not made.

e. What amounts will appear on the lessee's December 31, 2025, balance sheet relative to the lease contract?

f. How would the value of the lease liability in part b change if Cage also agreed to pay the fixed annual insurance on the equipment of $2,000 at the same time as the rental payments?

P20.3 (LO 2, 4) Groupwork (Lessee Entries and Balance Sheet Presentation, Finance Lease) Ludwick Steel Company, as lessee, signed a lease agreement for equipment for 5 years, beginning December 31, 2025. Annual rental payments of $40,000 are to be made at the beginning of each lease year (December 31). The interest rate used by the lessor in setting the payment schedule is 6%; Ludwick's incremental borrowing rate is 8%. Ludwick is unaware of the rate being used by the lessor. At the end of the lease, Ludwick has the option to buy the equipment for $5,000, considerably below its estimated fair value at that time. The equipment has an estimated useful life of 7 years, with no salvage value. Ludwick uses the straight-line method of depreciation on similar owned equipment.

Instructions

a. Prepare the journal entry or entries, with explanations, that Ludwick should record on December 31, 2025.

b. Prepare the journal entry or entries, with explanations, that Ludwick should record on December 31, 2026. (Prepare the lease amortization schedule for all five payments.)

c. Prepare the journal entry or entries, with explanations, that Ludwick should record on December 31, 2027.

d. What amounts would appear on Ludwick's December 31, 2027, balance sheet relative to the lease arrangement?

P20.4 (LO 2) (Lessee Entries, Finance Lease with Monthly Payments) Shapiro Inc. was incorporated in 2024 to operate as a computer software service firm, with an accounting fiscal year ending August 31. Shapiro's primary product is a sophisticated online inventory-control system; its customers pay a fixed fee plus a usage charge for using the system.

Shapiro has leased a large, Alpha-3 computer system from the manufacturer. The lease calls for a monthly rental of $40,000 for the 144 months (12 years) of the lease term. The estimated useful life of the computer is 15 years.

All rentals are payable on the first day of the month beginning with August 1, 2025, the date the computer was installed and the lease agreement was signed. The lease is non-cancelable for its 12-year term, and it is secured only by the manufacturer's chattel lien on the Alpha-3 system.

This lease is to be accounted for as a finance lease by Shapiro, and it will be amortized by the straight-line method. Borrowed funds for this type of transaction would cost Shapiro 6% per year (0.5% per month). Following is a schedule of the present value of an annuity due for selected periods discounted at 0.5% per period when payments are made at the beginning of each period.

Periods (months)	Present Value of an Annuity Due Discounted at 0.5% per Period
1	1.000
2	1.995
3	2.985
143	102.497
144	102.987

Instructions

Prepare all entries Shapiro should make in its accounting records during August 2025 relating to this lease. Give full explanations and show supporting computations for each entry. Remember, August 31, 2025, is the end of Shapiro's fiscal accounting period, and it will be preparing financial statements on that date. Do not prepare closing entries.

P20.5 (LO 2, 4) (Basic Lessee Accounting with Difficult PV Calculation) In 2024, Grishell Trucking Company negotiated and closed a long-term lease contract for newly constructed truck terminals and freight storage facilities. The buildings were erected to the company's specifications on land owned by another company. On January 1, 2025, Grishell Trucking took possession of the leased properties.

Although the terminals have a composite useful life of 40 years, the non-cancelable lease runs for 20 years from January 1, 2025, with a bargain purchase option available upon expiration of the lease.

The 20-year lease is effective for the period January 1, 2025, through December 31, 2044. Rental payments of $800,000 are payable to the lessor on January 1 of each of the first 10 years of the lease term. Advance rental payments of $320,000 are due on January 1 for each of the last 10 years of the lease. The company has an option to purchase all of these leased facilities for $1 on December 31, 2044. The lease was negotiated to assure the lessor a 6% rate of return.

Instructions

a. Prepare a schedule to compute for Grishell Trucking the present value of the terminal facilities and related obligation at January 1, 2025.

b. Assuming that the present value of terminal facilities and related obligation at January 1, 2025, was $7,635,410, prepare journal entries for Grishell Trucking to record the:

1. Cash payment to the lessor on January 1, 2027.

2. Amortization of the cost of the leased properties for 2027, using the straight-line method and assuming a zero salvage value.

3. Accrual of interest expense at December 31, 2027.

Selected present value factors are as follows.

Periods	For an Ordinary Annuity of $1 at 6%	For $1 at 6%
1	.943396	.943396
2	1.833393	.889996
8	6.209794	.627412
9	6.801692	.591898
10	7.360087	.558395
19	11.158117	.330513
20	11.469921	.311805

P20.6 (LO 2, 4) (Lessee-Lessor Entries, Finance Lease with a Guaranteed Residual Value) Glaus Leasing Company agrees to lease equipment to Jensen Corporation on January 1, 2025. The following information relates to the lease agreement.

1. The term of the lease is 7 years with no renewal option, and the machinery has an estimated economic life of 9 years.

2. The cost of the machinery is $525,000, and the fair value of the asset on January 1, 2025, is $700,000.

3. At the end of the lease term, the asset reverts to the lessor and has a guaranteed residual value of $50,000. Jensen estimates that the expected residual value at the end of the lease term will be $50,000. Jensen amortizes all of its leased equipment on a straight-line basis.

4. The lease agreement requires equal annual rental payments, beginning on January 1, 2025.

5. The collectibility of the lease payments is probable.

6. Glaus desires a 5% rate of return on its investments. Jensen's incremental borrowing rate is 6%, and the lessor's implicit rate is unknown.

Instructions

(Assume the accounting period ends on December 31.)

a. Discuss the nature of this lease for both the lessee and the lessor.

b. Calculate the amount of the annual rental payment required.

c. Compute the value of the lease liability to the lessee.

d. Prepare the journal entries Jensen would make in 2025 and 2026 related to the lease arrangement.

e. Prepare the journal entries Glaus would make in 2025 and 2026 related to the lease arrangement.

f. Suppose Jensen expects the residual value at the end of the lease term to be $40,000 but still guarantees a residual of $50,000. Compute the value of the lease liability at lease commencement.

P20.7 (LO 2, 4) (Lessor Computations and Entries, Sales-Type Lease with Guaranteed Residual Value) Amirante Inc. manufactures an X-ray machine with an estimated life of 12 years and leases it to Chambers Medical Center for a period of 10 years. The normal selling price of the machine is $495,678, and its guaranteed residual value at the end of the non-cancelable lease term is estimated to be $15,000. The hospital will pay rents of $60,000 at the beginning of each year. Amirante incurred costs of $300,000 in manufacturing the machine and $14,000 in legal fees directly related to the signing of the lease. Amirante has determined that the collectibility of the lease payments is probable and that the implicit interest rate is 5%.

Instructions

a. Discuss the nature of this lease in relation to the lessor and compute the amount of each of the following items.

1. Lease receivable at commencement of the lease.

2. Sales price.

3. Cost of sales.

b. Prepare a 10-year lease amortization schedule for Amirante, the lessor.

c. Prepare all of the lessor's journal entries for the first year.

P20.8 (LO 2, 4) (Lessee Computations and Entries, Finance Lease with Guaranteed Residual Value) Assume the same data as in P20.7 and that Chambers Medical Center has an incremental borrowing rate of 5% and an expected residual value at the end of the lease of $10,000.

Instructions

a. Discuss the nature of this lease in relation to the lessee, and compute the amount of the initial lease liability.

b. Prepare a 10-year lease amortization schedule.

c. Prepare all of the lessee's journal entries for the first year.

d. Suppose Chambers Medical Center incurred $7,000 of document preparation costs after the execution of the lease. How would the initial measurement of the lease liability and right-of-use asset be affected?

P20.9 (LO 2, 4) Groupwork (Lessor Computations and Entries, Sales-Type Lease with Unguaranteed Residual Value) George Company manufactures a check-in kiosk with an estimated economic life of 12 years and leases it to National Airlines for a period of 10 years. The normal selling price of the equipment is $299,140, and its unguaranteed residual value at the end of the lease term is estimated to be $20,000. National will pay annual payments of $40,000 at the beginning of each year. George incurred costs of $180,000 in manufacturing the equipment and $4,000 in sales commissions in closing the lease. George has determined that the collectibility of the lease payments is probable and that the implicit interest rate is 8%.

Instructions

a. Discuss the nature of this lease in relation to the lessor and compute the amount of each of the following items.

1. Lease receivable.

2. Sales price.

3. Cost of goods sold.

b. Prepare a 10-year lease amortization schedule for George, the lessor.

c. Prepare all of the lessor's journal entries for the first year.

P20.10 (LO 2, 4) (Lessee Computations and Entries, Finance Lease with Unguaranteed Residual Value) Assume the same data as in P20.9, with National Airlines having an incremental borrowing rate of 8%.

Instructions

a. Discuss the nature of this lease in relation to the lessee, and compute the amount of the initial lease liability.

b. Prepare a 10-year lease amortization schedule.

c. Prepare all of the lessee's journal entries for the first year. Assume straight-line depreciation.

P20.11 (LO 2, 4) Groupwork (Lessee-Lessor Accounting for Residual Values) Goring Dairy leases its milking equipment from King Finance Company under the following lease terms.

1. The lease term is 10 years, non-cancelable, and requires equal rental payments of $30,300 due at the beginning of each year starting January 1, 2025.
2. The equipment has a fair value at the commencement of the lease (January 1, 2025) of $242,741 and a cost of $180,000 on King Finance's books. It also has an estimated economic life of 15 years and an expected residual value of $45,000, though Goring Dairy has guaranteed a residual value of $50,000 to King Finance.
3. The lease contains no renewal options, and the equipment reverts to King Finance upon termination of the lease. The equipment is not of a specialized use.
4. Goring Dairy's incremental borrowing rate is 8% per year. The implicit rate is also 8%.
5. Goring Dairy depreciates similar equipment that it owns on a straight-line basis.
6. Collectibility of the payments is probable.

Instructions

a. Evaluate the criteria for classification of the lease, and describe the nature of the lease. In general, discuss how the lessee and lessor should account for the lease transaction.

b. Prepare the journal entries for the lessee and lessor at January 1, 2025, and December 31, 2025 (the lessee's and lessor's year-end). Assume no reversing entries.

c. What would have been the amount of the initial lease liability recorded by the lessee upon the commencement of the lease if:

1. The residual value of $50,000 had been guaranteed by a third party, not the lessee?

2. The residual value of $50,000 had not been guaranteed at all?

d. On the lessor's books, what would be the amount recorded as the lease receivable at the commencement of the lease, assuming:

1. The residual value of $50,000 had been guaranteed by a third party?

2. The residual value of $50,000 had not been guaranteed at all?

P20.12 (LO 2, 4) (Lessee-Lessor Entries, Balance Sheet Presentation, Finance and Sales-Type Lease) Winston Industries and Ewing Inc. enter into an agreement that requires Ewing Inc. to build three diesel-electric engines to Winston's specifications. Upon completion of the engines, Winston has agreed to lease them for a period of 10 years and to assume all costs and risks of ownership. The lease is non-cancelable, becomes effective on January 1, 2025, and requires annual rental payments of $384,532 each January 1, starting January 1, 2025.

Winston's incremental borrowing rate is 8%. The implicit interest rate used by Ewing and known to Winston is 6%. The total cost of building the three engines is $2,600,000. The economic life of the engines is estimated to be 10 years, with residual value set at zero. Winston depreciates similar equipment on a straight-line basis. At the end of the lease, Winston assumes title to the engines. Collectibility of the lease payments is probable.

Instructions

a. Discuss the nature of this lease transaction from the viewpoints of both lessee and lessor.

b. Prepare the journal entry or entries to record the transaction on January 1, 2025, on the books of Winston (the lessee).

c. Prepare the journal entry or entries to record the transaction on January 1, 2025, on the books of Ewing (the lessor).

d. Prepare the journal entries for both the lessee and lessor to record the first rental payment on January 1, 2025.

e. Prepare the journal entries for both the lessee and lessor to record any entries needed in connection with the lease at December 31, 2025. (Prepare a lease amortization schedule for 2 years.)

f. Show the items and amounts that would be reported on the balance sheet (not notes) at December 31, 2025, for both the lessee and the lessor.

g. Assume that Winston incurs legal fees related to the execution of the lease of $30,000. In addition, assume Winston receives a lease incentive from Ewing of $50,000 to enter the lease. How will this affect your answer to part b?

P20.13 (LO 2, 4) Excel (Balance Sheet and Income Statement Disclosure—Lessee) The following facts pertain to a non-cancelable lease agreement between Alschuler Leasing Company and McKee Electronics, a lessee, for a computer system.

Commencement date	October 1, 2025
Lease term	6 years
Economic life of leased equipment	6 years
Fair value of asset at October 1, 2025	$313,043
Book value of asset at October 1, 2025	$280,000
Residual value at end of lease term	–0–
Lessor's implicit rate	8%
Lessee's incremental borrowing rate	8%
Annual lease payment due at the beginning of each year, beginning with October 1, 2025	$62,700

The collectibility of the lease payments is probable by the lessor. The asset will revert to the lessor at the end of the lease term. The straight-line depreciation method is used for all equipment.

The following amortization schedule has been prepared correctly for use by both the lessor and the lessee in accounting for this lease. The lease is to be accounted for properly as a finance lease by the lessee and as a sales-type lease by the lessor.

Date	Lease Payment/ Receipt	Interest (8%) on Unpaid Liability/ Receivable	Reduction of Lease Liability/ Receivable	Balance of Lease Liability/ Receivable
10/01/25				$313,043
10/01/25	$ 62,700		$ 62,700	250,343
10/01/26	62,700	$20,027	42,673	207,670
10/01/27	62,700	16,614	46,086	161,584
10/01/28	62,700	12,927	49,773	111,811
10/01/29	62,700	8,945	53,755	58,056
10/01/30	62,700	4,644	58,056	–0–
	$376,200	$63,157	$313,043	

Instructions

a. Assuming the lessee's accounting period ends on September 30, answer the following questions with respect to this lease agreement.

1. What items and amounts will appear on the lessee's income statement for the year ending September 30, 2026?
2. What items and amounts will appear on the lessee's balance sheet at September 30, 2026?
3. What items and amounts will appear on the lessee's income statement for the year ending September 30, 2027?
4. What items and amounts will appear on the lessee's balance sheet at September 30, 2027?

b. Assuming the lessee's accounting period ends on December 31, answer the following questions with respect to this lease agreement.

1. What items and amounts will appear on the lessee's income statement for the year ending December 31, 2025?
2. What items and amounts will appear on the lessee's balance sheet at December 31, 2025?
3. What items and amounts will appear on the lessee's income statement for the year ending December 31, 2026?
4. What items and amounts will appear on the lessee's balance sheet at December 31, 2026?

P20.14 (LO 2, 4) Excel (Balance Sheet and Income Statement Disclosure—Lessor) Assume the same information as in P20.13.

Instructions

a. Assuming the lessor's accounting period ends on September 30, answer the following questions with respect to this lease agreement.

1. What items and amounts will appear on the lessor's income statement for the year ending September 30, 2026?
2. What items and amounts will appear on the lessor's balance sheet at September 30, 2026?
3. What items and amounts will appear on the lessor's income statement for the year ending September 30, 2027?
4. What items and amounts will appear on the lessor's balance sheet at September 30, 2027?

b. Assuming the lessor's accounting period ends on December 31, answer the following questions with respect to this lease agreement.

1. What items and amounts will appear on the lessor's income statement for the year ending December 31, 2025?
2. What items and amounts will appear on the lessor's balance sheet at December 31, 2025?
3. What items and amounts will appear on the lessor's income statement for the year ending December 31, 2026?
4. What items and amounts will appear on the lessor's balance sheet at December 31, 2026?

P20.15 (LO 2, 3) (Finance and Operating Lease) Anthony Incorporated leases a piece of machinery to Irving Company on January 1, 2025, under the following terms.

1. The lease is to be for 4 years with rental payments of $12,471 to be made at the beginning of each year.
2. The machinery has a fair value of $67,000, a book value of $50,000, and an economic life of 10 years.
3. At the end of the lease term, both parties expect the machinery to have a residual value of $25,000. To protect against a large loss, Anthony requests Irving to guarantee $17,500 of the residual value, which Irving agrees to do.
4. The lease does not transfer ownership at the end of the lease term, does not have any bargain purchase options, and the asset is not of a specialized nature.
5. The implicit rate is 5%, which is known by Irving.
6. Collectibility of the payments is probable.

Instructions

a. Evaluate the criteria for classification of the lease, and describe the nature of the lease.

b. Prepare the journal entries for Irving for the year 2025.

c. Prepare the journal entries for Anthony for the year 2025.

d. Suppose Irving did not guarantee any amount of the expected residual value. How would your answers to parts (a), (b), and (c) change?

P20.16 (LO 3) (Operating Lease) Lewis Corporation entered into a lease agreement on January 1, 2025, to provide Dawkins Company with a piece of machinery. The terms of the lease agreement were as follows.

1. The lease is to be for 3 years with rental payments of $10,521 to be made at the beginning of each year.
2. The machinery has a fair value of $55,000, a book value of $40,000, and an economic life of 8 years.
3. At the end of the lease term, both parties expect the machinery to have a residual value of $30,000, none of which is guaranteed.
4. The lease does not transfer ownership at the end of the lease term, does not have a bargain purchase option, and the asset is not of a specialized nature.
5. The implicit rate is 6%, which is known by Dawkins.
6. Collectibility of the payments is probable.

Instructions

a. Evaluate the criteria for classification of the lease, and describe the nature of the lease.

b. Prepare the amortization schedules Dawkins will use over the lease term.

c. Prepare the 2025 journal entries for Dawkins.

d. Prepare the 2025 journal entries for Lewis.

e. Suppose the lease were only for one year instead of 3 years, with just one lease payment at the beginning of the lease term. Prepare any journal entries Dawkins would need, assuming it elects to use the short-term lease option.

P20.17 (LO 3) Groupwork (Lessee-Lessor Entries, Operating Lease with an Unguaranteed Residual Value) Cleveland Inc. leased a new crane to Abriendo Construction under a 5-year, non-cancelable contract starting January 1, 2025. Terms of the lease require payments of $48,555 each January 1, starting January 1, 2025. The crane has an estimated life of 7 years, a fair value of $240,000, and a cost to Cleveland of $240,000. The estimated fair value of the crane is expected to be $45,000 (unguaranteed) at the end of the lease term. No bargain purchase or renewal options are included in the contract, and it is not a specialized asset. Both Cleveland and Abriendo adjust and close books annually at December 31. Collectibility of the lease payments is probable. Abriendo's incremental borrowing rate is 8%, and Cleveland's implicit interest rate of 8% is known to Abriendo.

Instructions

a. Identify the type of lease involved and give reasons for your classification. Discuss the accounting treatment that should be applied by both the lessee and the lessor.

b. Prepare all the entries related to the lease contract and leased asset for the year 2025 for the lessee and lessor, assuming Abriendo uses straight-line amortization for all similar leased assets, and Cleveland depreciates the asset on a straight-line basis with a salvage value of $15,000.

c. Discuss what should be presented in the balance sheet, the income statement, and the related notes of both the lessee and the lessor at December 31, 2025.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ20.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements, accompanying notes, and management's discussion and analysis to answer the following questions.

a. What types of leases are used by P&G?

b. What amount of operating leases was reported by P&G in total and for less than one year?

c. What minimum annual rental commitments under all non-cancelable leases at June 30, 2019, did P&G disclose?

Comparative Analysis Case: Delta Air Lines and Southwest Airlines

UYJ20.2 The financial statements and notes to the financial statements for **Delta Air Lines** and **Southwest Airlines** can be found online.

Instructions

Use information found in the companies' financial reports to answer the following questions.

a. What types of leases are used by Southwest and Delta and on what assets are these leases primarily used?

b. How long-term are some of Southwest's leases? What are some of the characteristics or provisions of Southwest's (as lessee) leases?

c. What did Southwest report in 2020 as its maturities of lease liabilities for operating and finance leases?

d. At year-end 2020, what was the present value of the minimum rental payments under Southwest's finance leases? How much imputed interest was deducted from the future minimum annual rental commitments to arrive at the present value?

e. What were the amounts of Southwest's lease costs in 2020 and 2019?

f. How does Delta's use of leases compare with Southwest's?

Financial Statement Analysis Case: Walmart Inc.

UYJ20.3 The following are the financial statement disclosures from the January 31, 2020, annual report of **Walmart Inc.**

Walmart Inc.
(dollar amounts in millions)

	January 31, 2020
Current Liabilities	
Finance lease obligations due within one year	$ 511
Operating lease obligations due within one year	1,793
Noncurrent Liabilities	
Long-term operating lease obligations	$16,171
Long-term finance lease obligations	4,307

The aggregate annual lease obligations at January 31, 2020 are as follows:

Fiscal Year	Operating Leases	Finance Leases
2021	2,587	797
2022	2,358	757
2023	2,138	640
2024	1,932	552
2025	1,728	492
Thereafter	15,514	5,612
Total undiscounted lease obligations	26,257	8,850
Less imputed interest	8,293	4032
Net lease obligations	17,964	4,818

The aggregate minimum annual lease rentals as of January 31, 2019 for the remaining contractual term of non-cancelable leases were as follows:

Fiscal Year	Operating Leases	Financing Lease Obligations
2020	$ 1,856	$ 917
2021	1,655	856
2022	1,420	794
2023	1,233	667
2024	1,063	593
Thereafter	6,891	6,069
Total Minimum Rentals	$14,118	9,896
Less estimated executory costs		(23)
Net minimum lease payments		9,873
Financing Obligation Noncash Gains and Other		2,278
Less imputed interest		(4,739)
PV of minimum lease payments		$7,412

The Company's lease costs consist of the following:
Fiscal Year Ended January 31, 2020

Operating lease cost	$2,670
Finance lease cost:	
Amortization of right-of-use assets	480
Interest on lease obligations	306
Variable lease cost	691

Instructions

Answer the following questions related to these disclosures.

a. What is the total obligations (undiscounted) under finance leases at January 31, 2020, for Walmart?

b. What is the total rental expense reported for leasing activity for the year ended January 31, 2020, for Walmart?

c. What is the present value of minimum lease payments related to operating leases at January 31, 2020?

Accounting, Analysis, and Principles

UYJ20.4 Salaur Company, a risky start-up, is evaluating a lease arrangement being offered by TSP Company for use of a standard computer system. The lease is non-cancelable, and in no case does Salaur receive title to the computers during or at the end of the lease term. TSP will lease the returned computers to other customers. The lease starts on January 1, 2025, with the first rental payment due on January 1, 2025. Additional information related to the lease and the underlying leased asset is as follows.

Yearly rental	$3,057.25
Lease term	3 years
Estimated economic life	5 years
Purchase option	$3,000 at end of 3 years, which approximates fair value
Renewal option	1 year at $1,500; no penalty for nonrenewal; standard renewal clause
Fair value at commencement	$10,000
Cost of asset to lessor	$8,000
Residual value:	
Guaranteed	–0–
Unguaranteed	$3,000
Lessor's implicit rate (known by the lessee)	12%
Estimated fair value at end of lease	$3,000

Accounting

a. Analyze the lease classification tests for this lease for Salaur. Prepare the journal entries for Salaur for 2025.

b. Repeat the requirements in part a, assuming Salaur has the option to purchase the system at the end of the lease for $100.

Analysis

Briefly discuss the impact of the accounting for this lease as a finance or operating lease for two common ratios: return on assets and debt to total assets.

Principles

What fundamental quality of useful information is being addressed when a company like Salaur capitalizes all leases with terms of one year or longer?

Developing Your Professional Skills

Critical-Thinking Cases

CT20.1 (LO 2, 4) Writing (Lessee Accounting and Reporting) On January 1, 2025, Evans Company entered into a non-cancelable lease for a machine to be used in its manufacturing operations. The lease transfers control of the machine to Evans by the end of the lease term. The term of the lease is 8 years, which equals the useful life of the asset. The lease payment made by Evans on January 1, 2025, was one of eight equal annual payments. At the commencement of the lease, the criteria established for classification as a finance lease by the lessee were met.

Instructions

a. What is the theoretical basis for the accounting standard that requires certain long-term leases to be capitalized by the lessee? Do not discuss the specific criteria for classifying a specific lease as a finance lease.

b. How should Evans account for this lease at its commencement?

c. What expenses directly related to lease liability and right-of-use asset will Evans incur during the first year of the lease, and how will these expenses be determined?

d. How should Evans report the lease transaction on its December 31, 2025, balance sheet?

CT20.2 (LO 2, 4) (Lessor and Lessee Accounting and Disclosure) Sylvan Inc. entered into a non-cancelable lease arrangement with Breton Leasing Corporation for a certain machine. Breton's primary business is leasing. Sylvan will lease the machine for a period of 3 years, which is 50% of the machine's economic life. Breton will take possession of the machine at the end of the initial 3-year lease and lease it to another, smaller company that does not need the most current version of the machine. Sylvan does not guarantee any residual value for the machine and will not purchase the machine at the end of the lease term. Sylvan's incremental borrowing rate is 10%, and the implicit rate in the lease is 9%. Sylvan has no way of knowing the implicit rate used by Breton. Using either rate, the present value of the lease payments is between 90% and 100% of the fair value of the machine at the date of the lease agreement. Breton is reasonably certain that Sylvan will pay all lease payments.

Instructions

a. With respect to Sylvan (the lessee), answer the following.

1. What type of lease has been entered into? Explain the reason for your answer.
2. How should Sylvan compute the appropriate amount to be recorded for the lease or asset acquired?
3. What accounts will be created or affected by this transaction, and how will the lease or asset and other costs related to the transaction be recorded in earnings?
4. What disclosures must Sylvan make regarding this leased asset?

b. With respect to Breton (the lessor), answer the following.

1. What type of leasing arrangement has been entered into? Explain the reason for your answer.
2. How should this lease be recorded by Breton, and how are the appropriate amounts determined?
3. How should Breton determine the appropriate amount of revenue to be recognized from each lease payment?
4. What disclosures must Breton make regarding this lease?

CT20.3 (LO 2) (Lessee Capitalization Tests) On January 1, Santiago Company, a lessee, entered into three non-cancelable leases for new equipment, Lease L, Lease M, and Lease N. None of the three leases transfers ownership of the equipment to Santiago at the end of the lease term. For each of the three leases, the present value at the beginning of the lease term of the lease payments is 75% of the fair value of the equipment. The following information is specific to each lease.

1. Lease L does not contain a bargain purchase option. The lease term is equal to 80% of the estimated economic life of the equipment.
2. Lease M contains a bargain purchase option. The lease term is equal to 50% of the estimated economic life of the equipment.
3. Lease N does not contain a bargain purchase option. The lease term is equal to 50% of the estimated economic life of the equipment.

Instructions

a. How should Santiago classify each of the three leases above, and why? Discuss the rationale for your answer.

b. What amount, if any, should Santiago record as a liability at commencement of the lease for each of the three leases above?

c. Assuming that the lease payments are made on a straight-line basis, how should Santiago record each lease payment for each of the three leases above?

CT20.4 (LO 2, 3) (Comparison of Different Types of Accounting by Lessee and Lessor)

Part 1: Finance leases and operating leases are the two classifications of leases described in FASB pronouncements from the standpoint of the **lessee**.

Instructions

a. Describe how a finance lease would be accounted for by the lessee both at the commencement of the lease and during the first year of the lease, assuming the lease transfers ownership of the property to the lessee by the end of the lease.

b. Describe how an operating lease would be accounted for by the lessee both at the commencement of the lease and during the first year of the lease, assuming equal monthly payments are made by the lessee at the beginning of each month of the lease.

Do **not** discuss the criteria for distinguishing between finance leases and operating leases.

Part 2: Sales-type leases and operating leases are two of the classifications of leases described in FASB pronouncements from the standpoint of the **lessor**.

Instructions

Compare and contrast a sales-type lease with an operating lease as follows.

a. Lease receivable.

b. Recognition of interest revenue.

c. Gross profit.

Do **not** discuss the criteria for distinguishing between the leases described above and operating leases.

CT20.5 (LO 2, 4) Writing (Short-Term Lease vs. Finance Lease) You are auditing the December 31, 2025, financial statements of Hockney, Inc., manufacturer of novelties and party favors. During your inspection of the company garage, you discovered that a used automobile not listed in the equipment subsidiary ledger is parked there. You ask Stacy Reeder, plant manager, about the vehicle, and she tells you that the company did not list the automobile because the company was only leasing it and elected to use the short-term lease accounting option for the lease. The lease agreement was entered into on January 1, 2025, with Crown New and Used Cars.

You decide to review the lease agreement to ensure that the lease should be afforded short-term lease treatment, and you discover the following lease terms.

1. Non-cancelable term of 2 years.
2. Rental of $3,240 per year (at the end of each year). (The present value at 8% per year is $5,778.)
3. Expected residual value after 2 years is $500. (The present value at 8% per year is $429.) Hockney guarantees the residual value of $500.
4. Estimated economic life of the automobile is 2.5 years.
5. Hockney's incremental borrowing rate is 8% per year.

Instructions

You are a senior auditor writing a memo to your supervisor, the audit partner in charge of this audit, to discuss the above situation. Be sure to include (a) why you inspected the lease agreement, (b) what you determined about the lease, and (c) how you advised your client to account for this lease. Explain every journal entry that you believe is necessary to record this lease properly on the client's books. (It is also necessary to include the fact that you communicated this information to your client.)

CT20.6 (LO 4) Ethics (Lease Capitalization, Bargain Purchase Option) Baden Corporation entered into a lease agreement for 100 photocopy machines for its corporate headquarters. The lease agreement qualifies as an operating lease except there is a bargain purchase option. After the 5-year lease term, the corporation can purchase each copier for $1,000, when the anticipated fair value is $2,500.

Jerry Suffolk, the financial vice president, thinks the financial statements must recognize the lease agreement as a finance lease because of the bargain purchase option. The controller, Diane Buchanan, disagrees: "Although I don't know much about the copiers themselves, there is a way to avoid recording the lease liability." She argues that the corporation might claim that copier technology advances rapidly and that by the end of the lease term, the machines will most likely not be worth the $1,000 bargain price.

Instructions

a. What ethical issue is at stake?

b. Should the controller's argument be accepted if she does not really know much about copier technology? Would it make a difference if the controller were knowledgeable about the rate of change in copier technology?

c. What should Suffolk do?

***CT20.7 (LO 5) (Sale-Leaseback)** On January 1, 2025, Perriman Company transferred equipment for cash and leased it back. As seller-lessee, Perriman retained the right to substantially all of the remaining use of the equipment. The term of the lease is 8 years.

Instructions

a. What is the major issue related to sale-leaseback accounting?

b. **1.** How should Perriman account for the sale portion of the sale-leaseback transaction at January 1, 2025?

2. How should Perriman account for the leaseback portion of the sale-leaseback transaction at January 1, 2025?

FASB Codification References

[1] FASB ASC 842 (Glossary). [Predecessor literature: None.]
[2] FASB ASC 842-10-25-2. [Predecessor literature: None.]
[3] FASB ASU 2016-2 [BC 71(c).] [Predecessor literature: None.]
[4] FASB ASU 2016-2 (BC 194, 197, 218). [Predecessor literature: None.]
[5] FASB ASC 842 (Glossary). [Predecessor literature: None.]
[6] FASB ASC 842-20-30-3. [Predecessor literature: None.]
[7] FASB ASC 842 (Glossary). [Predecessor literature: None.]
[8] FASB ASC 842-10-30-5(f). [Predecessor literature: None.]
[9] FASB ASC 842-20-40-2. [Predecessor literature: None.]
[10] FASB ASU 2016-2 (BC 93). [Predecessor literature: None.]
[11] FASB ASC 842-10-25-3(a). [Predecessor literature: None.]
[12] FASB ASC 842-30-25-3(b). [Predecessor literature: None.]
[13] FASB ASU 2016-2 (BC 61). [Predecessor literature: None.]
[14] FASB ASC 842-10-55-34 to 36. [Predecessor literature: None.]
[15] FASB ASC 842-10-15-30. [Predecessor literature: None.]
[16] FASB ASC 842 (Glossary). [Predecessor literature: None.]
[17] FASB ASC 842-30-25-1(c), 8, 10. [Predecessor literature: None.]
[18] FASB ASC 842-20-25-2. [Predecessor literature: None.]
[19] FASB ASC 842-20-50 and 842-30-50. [Predecessor literature: None.]
[20] FASB ASC 842-40-25, 842-40-30, and 842-40-50. [Predecessor literature: None.]
[21] FASB ASC 842-10-25-3; ASU 2016-2 (BC95-96). [Predecessor literature: None.]
[22] FASB ASC 842-30-25-9. [Predecessor literature: None.]
[23] FASB ASC 842-30-25-8. [Predecessor literature: None.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE20.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the "commencement date"?

b. What is the definition of "incremental borrowing rate"?

c. What is an unguaranteed residual asset?

d. What are variable lease payments?

CE20.2 What comprises lease payments? What is excluded?

CE20.3 What information should a lessee disclose about its finance leases in its financial statements and footnotes?

CE20.4 How should a lessor measure its net investment in either a sales-type lease or a direct financing lease?

Codification Research Case

Daniel Hardware Co. is considering alternative financing arrangements for equipment used in its warehouses. Besides purchasing the equipment outright, Daniel is also considering a lease. Accounting for the outright purchase is fairly straightforward, but because Daniel has not used equipment leases in the past, the accounting staff is less informed about the specific accounting rules for leases. The staff is aware of some general lease rules related to "right-of-use," but they are unsure how the accounting rules apply to their situation. Daniel has asked you to conduct some research on these items related to lease capitalization criteria.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. What is included in the measurement of (1) the lease liability and (2) the right-of-use asset?

b. Besides the non-cancelable term of the lease, what other considerations determine the "lease term"?

c. When should a lessee account for a lease modification? What procedures are followed?

Additional Professional Resources

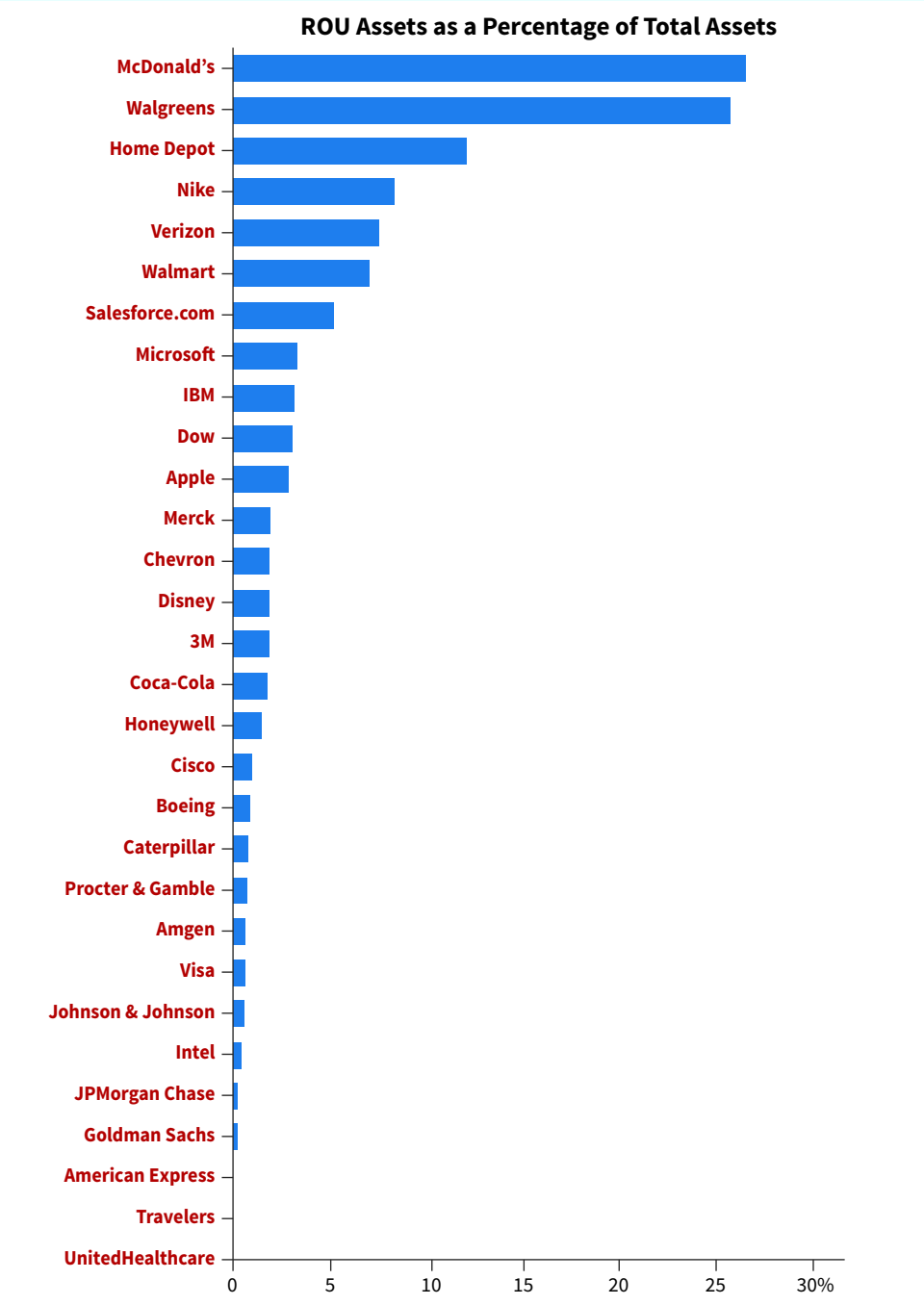
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Analytics to Evaluate the Impact of Leases

DA20.1 As you have learned in this chapter, when a company engages in a lease transaction, it must record a right-of-use (ROU) asset on its balance sheet along with the related liability. Reporting ROU assets is relatively new and came into effect with the leasing standard in 2019. As with any other asset, ROU assets can be impaired, which could have a direct impact on a company's earnings.

Using public financial data and a tool like Excel can help investors and analysts evaluate the sensitivity of a company's earnings to the new threat of ROU asset impairment. For example, the following graph can help us understand which companies are most susceptible to potential impairments based on the magnitude of ROU assets relative to total assets on their balance sheets.



Required

You are asked to report on the impairment sensitivity among the 30 companies in the Dow Jones Industrial Average. Given a set of raw data, you will use Excel to prepare different visualizations regarding the impact of potential ROU asset impairment on company earnings. Using the charts created, you will analyze the data and provide insights on how potential impairments affect the overall financial health of a company.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 7

Compare the accounting for leases under GAAP and IFRS.

Leasing is a global business. Lessors and lessees enter into arrangements with one another without regard to national boundaries. Although GAAP and IFRS for leasing are not identical, both the FASB and the IASB decided that prior lease accounting did not provide the most useful, transparent, and complete information about leasing transactions. In response, the FASB and IASB worked together on a lease accounting project. The IASB issued *IFRS 16, Leases* in January 2016. Many of the requirements in the new FASB standard are the same as those in *IFRS 16*. The main differences between GAAP and IFRS under the new rules are in relation to the lessee accounting model. Specifically, IFRS does not make a distinction between finance leases and operating leases in the financial statements. As a result, lessees account for all leases using the finance lease method. Following are the key similarities and differences between GAAP and IFRS related to the accounting for leases.

Similarities

- Both GAAP and IFRS share the same objective of recording leases by lessees and lessors according to their economic substance—that is, according to the definitions of assets and liabilities.
- Much of the terminology for lease accounting in IFRS and GAAP is the same.
- Both GAAP and IFRS require lessees to recognize a right-of-use asset and related lease liability for leases with terms longer than one year.
- Under both IFRS and GAAP, lessors use the same general criteria (consistent with the recent standard on revenue) to determine if there is transfer of control of the underlying asset and if lessors classify leases as sales-type or operating.
- GAAP and IFRS have similar qualitative and quantitative disclosure requirements for lessees.

Differences

- There is no classification test for lessees under *IFRS 16*. Thus, lessees account for all leases using the finance lease method—that is, leases classified as operating leases under GAAP will be accounted for differently compared to IFRS.
- IFRS allows alternative measurement bases for the right-of-use asset (e.g., the revaluation model, in accordance with *IAS 16, Property, Plant and Equipment*).
- In addition to the short-term lease exception, IFRS has an additional lessee recognition and measurement exemption for leases of assets of low value (e.g., personal computers, small office furniture, with values less than or equal to $5,000).

- IFRS does not include any explicit guidance on collectibility of the lease payments by lessors and amounts necessary to satisfy a residual value guarantee.
- IFRS does not distinguish between sales-type and direct financing leases for lessors. Therefore, *IFRS 16* permits recognition of selling profit on direct financing leases at lease commencement.
- IFRS applies to leases of any asset, whether tangible plant, property, or intangible assets. GAAP applies only to tangible plant property.
- IFRS uses the same model for leases for both lessees and lessors, whereas GAAP uses a different model for lessees and lessors.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 21

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Accounting Changes and Error Analysis

WHAT are accounting changes and error analysis?

Sometimes a company experiences an accounting change. Examples include changing from one GAAP method to another, or changing an accounting estimate. Many factors can drive these accounting changes, such as new accounting pronouncements, changes in a company's industry, and new technologies. Error analysis is more self-explanatory. Errors will happen in an accounting system. When they do occur, it is important to know how to correct them.

WHY is understanding accounting changes and error analysis important?

Accounting changes can impact the comparability and consistency of financial statements from one period to the next. For example, **Microsoft** recently changed its estimate for the useful lives for some fixed assets as follows.

- Server equipment—Useful life increased from 3 years to 4 years.
- Network equipment—Useful life increased from 2 years to 4 years.

What happens to depreciation expense when useful lives are extended? Depreciation expense each year will **decrease**.

In its first quarter after this change, Microsoft's operating income increased by 25%. The question then becomes, was there really improvement in earnings, or was the improvement primarily a function of the change in estimate? As the following table indicates, Microsoft's change in estimate has had the largest impact on income of any other estimate by an S&P 500 company in a 14-year period.[1]

Top Impacts from Changes in Accounting Estimates

Company	Effective Date	Impact on Income (in millions)	Nature of Change
1. **Microsoft**	07/01/2020	$2,700	Depreciation, depletion, or amortization
2. **CitiGroup**	12/31/2008	2,500	Accounts/loans receivable, investments, and cash issues
3. **General Electric**	12/31/2016	2,216	Revenue recognition
4. **Berkshire Hathaway**	06/30/2017	1,071	Liabilities, accruals, or reserves
5. **General Electric**	12/31/2014	1,000	Revenue recognition
6. **Amazon**	01/01/2020	786	Depreciation, depletion, or amortization
7. **General Electric**	12/31/2006	700	Revenue recognition
8. **Apple**	09/30/2017	640	Other accounting estimates

It is therefore important to understand why companies have accounting changes and how those changes impact the financial statements in current and future periods.

HOW do companies account for accounting changes and error analysis?

The type of accounting change will determine the accounting treatment. Sometimes a company must adjust prior period financial statements to indicate how those reports would have resulted if the change had been applied earlier. Sometimes a company will make the change to current and future periods only. Correcting errors requires analytical skills to determine the amount of error, which accounts are affected, and how to correct for the error in the current period.

[1] "Change in Accounting Estimate Boosts Microsoft's Q1 2021 Gross Margin," *Audit Analytics* (October 28, 2020).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 21.1 Discuss the types of accounting changes and the accounting for changes in accounting principles.	**21.1 Accounting Changes** • Background • Changes in accounting principle • Other accounting change issues	Examples **21.1** Adjusting Entry for the Current Year **21.2** Recast Retained Earnings Statement **21.3** Indirect Effects of an Accounting Change **21.4** Impracticability of Retrospective Application Put It into Practice LO 21.1 Account for Changes in Accounting Principle
LO 21.2 Describe the accounting for changes in estimates and changes in the reporting entity.	**21.2 Other Changes** • Changes in accounting estimates • Changes in reporting entity	Examples **21.5** Change in Estimate **21.6** Change in Depreciation Method Put It into Practice LO 21.2 Account for Changes in Accounting Estimates
LO 21.3 Describe the accounting for correction of errors.	**21.3 Accounting Errors** • Adjustments and restatements • Summary	Examples **21.7** Income Statement and Balance Sheet Effects **21.8** Single-Period Statements **21.9** Comparative Statements Put It into Practice LO 21.3 Account for Errors
LO 21.4 Analyze the effects of errors.	**21.4 Error Analysis** • Reclassification errors • Balance sheet and income statement errors • Comprehensive example • Preparation of statements with error corrections	Examples **21.10** Counterbalancing Error **21.11** Failure to Record Accrued Wages **21.12** Failure to Record Prepaid Expenses **21.13** Overstatement of Accrued Revenue **21.14** Failure to Record Depreciation **21.15** Failure to Adjust for Bad Debts Put It into Practice LO 21.4 Analyze Errors

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

21.1 Accounting Changes

LEARNING OBJECTIVE 1

Discuss the types of accounting changes and the accounting for changes in accounting principles.

Background

In some areas of accounting, companies have alternative accounting methods from which to choose. For example, a company can use LIFO, FIFO, or average-cost to allocate inventory costs. Financial statements include estimates, such as bad debt expense and useful lives for depreciable assets, that may change over time. These accounting alternatives can impact the comparability of financial information between periods and between companies. Consider these examples:

- If **Ford** revises its estimates for equipment useful lives, depreciation expense for the current year will not be comparable to depreciation expense reported by Ford in prior years.
- If **OfficeMax** changes to FIFO inventory pricing while **Staples** uses LIFO, it will be difficult to compare these companies' reported results.

Underlying Concepts

While changes in accounting may enhance the qualitative characteristic of **usefulness**, these changes may adversely affect the enhancing characteristics of **comparability** and **consistency.**

The FASB has established a reporting framework, which involves three types of accounting changes. [1] (See the FASB Codification References near the end of the chapter.) The three types of accounting changes are listed and described in Illustration 21.1 (see Underlying Concepts).

ILLUSTRATION 21.1 Accounting Changes

Change in Accounting Principle	Change in Accounting Estimate	Change in Reporting Entity
A change from one generally accepted accounting principle to another one. For example: • Changing from LIFO to average-cost for inventory cost allocation • Adoption of a new generally accepted accounting standard	A change that occurs as the result of new information or additional experience. For example: • Change in estimate of the useful lives of depreciable assets • Updating estimates on accrued warranty expenditures	A change from reporting as one type of entity to another type of entity. For example: • Changing from individual to consolidated reporting • Changing the subsidiaries for which a company prepares consolidated financial statements

Errors in financial statements, while necessitating a change to correct them, are not classified as an accounting change. Errors result from math mistakes, inaccurate application of accounting principles, or oversight or misuse of the facts that existed when preparing the financial statements. For example, a company may incorrectly apply the retail inventory method for determining its inventory value. As you will see, the accounting for errors is similar to accounting changes.

The FASB classifies changes into these three types because **each type involves different methods of recognizing changes when a company presents comparative financial statements**. Comparative financial statements are a complete set of financial statements for more than one accounting period. Typically, companies report two or three years of financial statements in a side-by-side format so users can compare performance across multiple periods. The FASB has identified three possible methods for reporting accounting changes:

1. **Report changes retrospectively.** Retrospective application means that previously issued financial statements must be recast as if the new accounting principle has always been used. In other words, the company "goes back" and adjusts prior years' statements on a basis consistent with the newly adopted principle. The company shows the cumulative effect of the change as an adjustment to the beginning balance of retained earnings for the **earliest year presented** in the comparative financial statements.
2. **Report changes currently.** Current application means the company **does not recast** prior-year financial statements. Instead, the company applies the new principle to the

current-year financials and reports the **cumulative effect** of the change with an adjustment to the opening balance of retained earnings. This approach is sometimes referred to as modified retrospective.[2]

3. **Report changes prospectively.** Prospective application means **no changes to prior-year financial statements** and **no reporting the cumulative effect of the change** as an adjustment to the opening balance of retained earnings. The company applies the new principle in the current year and future years only.

Changes in Accounting Principle

By definition, a **change in accounting principle** **involves a change from one generally accepted accounting principle to another.** For example, a company might change the basis of inventory pricing from average-cost to LIFO. Or, it might change its method of revenue recognition for long-term construction contracts from the cost-recovery to the percentage-of-completion method.

When a company has a change in accounting principle, the FASB **requires that companies use the retrospective approach.** Why? Because it provides financial statement users with more useful information. The rationale is that changing the prior statements to be on the same basis as the new principle results in greater consistency across accounting periods. **[2]** Users can better compare results from one period to the next.

Retrospective Accounting Change Approach

When applying the retrospective approach, a company follows three basic steps:

1. **Adjust the carrying amounts of affected assets and liabilities as of the beginning of the current year.** A company prepares an adjusting entry **in the current year** to update the beginning balance of affected asset and liability accounts. Affected expenses and revenues from prior years have been closed to retained earnings. Therefore, the entry will include an adjustment to retained earnings for the prior-year expenses and revenues.
2. **Recast the financial statements for each prior period presented.** A company uses the new accounting principle in the current year and adjusts all prior financial statements that are shown in comparative form with the current year. Not all items from prior years will change, only the accounts affected by the change will have an updated amount. However, certain totals shown on the prior financial statements will change, such as net income, retained earnings, and total assets and/or total liabilities. The opening balance of retained earnings for the earliest year presented is adjusted to report the cumulative effect of the change for prior periods not presented.
3. **Prepare a disclosure detailing the change.** The disclosure of accounting changes is particularly important. Financial statement readers want consistent information from one period to the next. The note to the financial statements indicates the nature of the change, why the company made the change, the years affected, and the impact on various line items in the financial statements.

To illustrate the retrospective approach, let's analyze a change in accounting principle made by Lancer Company. Lancer Company has accounted for its inventory using the LIFO method. In 2025, the company changes to the FIFO method because management believes this approach provides a more appropriate reporting of its inventory costs. **Illustration 21.2** provides additional information related to Lancer Company.

[2]Under prior GAAP, the current approach was implemented by reporting the cumulative effect of the change on prior years' income only in the current-year income statement, as an unusual and infrequent item. This approach was criticized due to lack of comparability, given the company does not change prior year financial statements to be on the same basis as amounts reported in the current period under the new method.

ILLUSTRATION 21.2 Lancer Company Information

1. Lancer Company started its operations on January 1, 2023. At that time, stockholders invested $100,000 in the business in exchange for common stock.
2. All sales, purchases, and operating expenses for the period 2023–2025 are cash transactions. Lancer's cash flows over this period are as follows.

	2023	2024	2025
Sales	$300,000	$300,000	$300,000
Purchases	90,000	110,000	125,000
Operating expenses	100,000	100,000	100,000
Cash flow from operations	$110,000	$ 90,000	$ 75,000

3. Lancer has used the LIFO method for financial reporting since its inception.
4. Inventory determined under LIFO and FIFO for the period 2023–2025 is as follows.

	LIFO Method	FIFO Method	Difference
January 1, 2023	$ 0	$ 0	$ 0
December 31, 2023	10,000	12,000	2,000
December 31, 2024	20,000	25,000	5,000
December 31, 2025	32,000	39,000	7,000

5. Cost of goods sold under LIFO and FIFO for the period 2023–2025 are as follows.

	Cost of Goods Sold		
	LIFO	FIFO	Difference
2023	$ 80,000	$ 78,000	$2,000
2024	100,000	97,000	3,000
2025	113,000	111,000	2,000

6. Earnings per share information is not required on the income statement.
7. All tax effects for this illustration should be ignored.

Given the information about Lancer Company, Illustration 21.3 shows its income statement, retained earnings statement, balance sheet, and statement of cash flows for 2023–2025 under LIFO.

ILLUSTRATION 21.3 Lancer Financial Statements (LIFO)

Lancer Company
Income Statement
For the Year Ended December 31

	2023	2024	2025
Sales	$300,000	$300,000	$300,000
Cost of goods sold (LIFO)	80,000	100,000	113,000
Operating expenses	100,000	100,000	100,000
Net income	$120,000	$100,000	$ 87,000

Lancer Company
Retained Earnings Statement
For the Year Ended December 31

	2023	2024	2025
Retained earnings (beginning)	$ 0	$120,000	$220,000
Add: Net income	120,000	100,000	87,000
Retained earnings (ending)	$120,000	$220,000	$307,000

(continues)

ILLUSTRATION 21.3 (continued)

Lancer Company
Balance Sheet
At December 31

	2023	2024	2025
Cash	$210,000	$300,000	$375,000
Inventory (LIFO)	10,000	20,000	32,000
Total assets	$220,000	$320,000	$407,000
Common stock	$100,000	$100,000	$100,000
Retained earnings	120,000	220,000	307,000
Total liabilities and stockholders' equity	$220,000	$320,000	$407,000

Lancer Company
Statement of Cash Flows
For the Year Ended December 31

	2023	2024	2025
Cash flows from operating activities			
Sales	$300,000	$300,000	$300,000
Purchases	90,000	110,000	125,000
Operating expenses	100,000	100,000	100,000
Net cash provided by operating activities	110,000	90,000	75,000
Cash flows from financing activities			
Issuance of common stock	100,000	—	—
Net increase in cash	210,000	90,000	75,000
Cash at beginning of year	0	210,000	300,000
Cash at end of year	$210,000	$300,000	$375,000

As Illustration 21.3 indicates, under LIFO Lancer Company reports $120,000 net income in 2023, $100,000 net income in 2024, and $87,000 net income in 2025. The amount of inventory reported on Lancer's balance sheet is based on LIFO costing. **Illustration 21.4** shows Lancer's income statement, retained earnings statement, balance sheet, and statement of cash flows for 2023–2025 under **FIFO**.

ILLUSTRATION 21.4 Lancer Financial Statements (FIFO)

Lancer Company
Income Statement
For the Year Ended December 31

	2023	2024	2025
Sales	$300,000	$300,000	$300,000
Cost of goods sold (FIFO)	78,000	97,000	111,000
Operating expenses	100,000	100,000	100,000
Net income	$122,000	$103,000	$ 89,000

Lancer Company
Retained Earnings Statement
For the Year Ended December 31

	2023	2024	2025
Retained earnings (beginning)	$ 0	$122,000	$225,000
Add: Net income	122,000	103,000	89,000
Retained earnings (ending)	$122,000	$225,000	$314,000

(continues)

ILLUSTRATION 21.4 (continued)

Lancer Company
Balance Sheet
At December 31

	2023	2024	2025
Cash	$210,000	$300,000	$375,000
Inventory (FIFO)	12,000	25,000	39,000
Total assets	$222,000	$325,000	$414,000
Common stock	$100,000	$100,000	$100,000
Retained earnings	122,000	225,000	314,000
Total liabilities and stockholders' equity	$222,000	$325,000	$414,000

Lancer Company
Statement of Cash Flows
For the Year Ended December 31

	2023	2024	2025
Cash flows from operating activities			
Sales	$300,000	$300,000	$300,000
Purchases	90,000	110,000	125,000
Operating expenses	100,000	100,000	100,000
Net cash provided by operating activities	110,000	90,000	75,000
Cash flows from financing activities			
Issuance of common stock	100,000	—	—
Net increase in cash	210,000	90,000	75,000
Cash at beginning of year	0	210,000	300,000
Cash at end of year	$210,000	$300,000	$375,000

Compare the financial statements reported in Illustration 21.3 with those in Illustration 21.4. You can see that under retrospective application, the change to FIFO inventory valuation affects reported inventories, cost of goods sold, net income, and retained earnings. **Given no tax effects, the cash flow statement under FIFO will be the same as under LIFO**.

With the information provided in Illustrations 21.2, 21.3, and 21.4, we are now ready to account for and report on the accounting change. The first step is to adjust the financial records for the change from LIFO to FIFO.

Example 21.1
Adjusting Entry for the Current Year

FACTS Comparing information in Illustration 21.3 and 21.4, Lancer analyzes its net income as follows.

	Net Income		
Year	LIFO	FIFO	Difference in Income
2023	$120,000	$122,000	$2,000
2024	100,000	103,000	3,000
Total at beginning of 2025	$220,000	$225,000	$5,000
Total in 2025	$ 87,000	$ 89,000	$2,000

QUESTION What entry should Lancer make to record the change to the FIFO method?

SOLUTION

To record the change to the FIFO method at the beginning of 2025:

Inventory	5,000	
Retained Earnings		5,000

The change increases the Inventory account by $5,000. This amount represents the difference between the ending inventory at December 31, 2024, under LIFO ($20,000) and the ending inventory under FIFO ($25,000). The credit to Retained Earnings indicates the amount needed to change the prior years' income, assuming that Lancer had used FIFO in previous periods.

As shown in Example 21.1, the adjusting entry made to retained earnings and affected asset accounts in the year of change is the **only journal entry made in the retrospective approach**. Journal entries are not made to prior years' revenue or expense accounts because the accounts have been closed.

Reporting a Change in Principle When a company presents comparative statements, all years presented are shown using the new accounting principle. That means prior years must be recast (or updated) to report amounts under the new principle (Step 2). Part of this process includes showing the cumulative effect of the change on retained earnings as of the beginning of the earliest year presented.

Disclosure related to accounting changes is particularly important (Step 3). Financial statement readers want consistent information from one period to the next. Such consistency ensures the usefulness of financial statements. The major disclosure requirements are as follows.

- The nature of and reason for the change in accounting principle. This must include an explanation of why the newly adopted accounting principle is preferable.
- The method of applying the change and:
  1. A description of the prior period information that has been retrospectively adjusted, if any.
  2. The effect of the change on income from continuing operations, net income (or other appropriate captions of changes in net assets or performance indicators), any other affected line item, and any affected per share amounts for the current period and for any prior periods retrospectively adjusted.
  3. The cumulative effect of the change on retained earnings or other components of equity or net assets in the balance sheet as of the beginning of the earliest period presented.[3]

Lancer Company will prepare comparative financial statements for 2024 and 2025 using FIFO (the new inventory method). **Illustration 21.5** indicates how Lancer might present this information.

[3]Presentation of the effect on financial statement subtotals and totals other than income from continuing operations and net income (or other appropriate captions of changes in the applicable net assets or performance indicator) is not required. **[3]**

ILLUSTRATION 21.5 Comparative Information Related to Accounting Change (FIFO)

Lancer Company
Income Statement
For the Year Ended December 31

	2025	2024
		As adjusted (Note A)
Sales	$300,000	$300,000
Cost of goods sold	111,000	97,000
Operating expenses	100,000	100,000
Net income	$ 89,000	$103,000

Note A

Nature and reason for change; description of prior period information adjusted

Change in Method of Accounting for Inventory Valuation On January 1, 2025, Lancer Company elected to change its method of valuing its inventory to the FIFO method; in all prior years, inventory was valued using the LIFO method. The Company adopted the new method of accounting for inventory to better report cost of goods sold in the year incurred. Comparative financial statements of prior years have been adjusted to apply the new method retrospectively. The following financial statement line items for years 2025 and 2024 were affected by the change in accounting principle.

Effect of change on key performance indicators

	2025			2024		
	LIFO	FIFO	Difference	LIFO	FIFO	Difference
Balance Sheet						
Inventory	$ 32,000	$ 39,000	$7,000	$ 20,000	$ 25,000	$5,000
Retained earnings	307,000	314,000	7,000	220,000	225,000	5,000
Income Statement						
Cost of goods sold	$113,000	$111,000	$2,000	$100,000	$ 97,000	$3,000
Net income	87,000	89,000	2,000	100,000	103,000	3,000
Statement of Cash Flows						
(no effect)						

Cumulative effect on retained earnings

As a result of the accounting change, retained earnings as of January 1, 2024, increased from $120,000, as originally reported using the LIFO method, to $122,000 using the FIFO method.

As Illustration 21.5 shows, Lancer Company reports net income under the newly adopted FIFO method for both 2024 and 2025. The company retrospectively adjusted the 2024 income statement to report the information on a FIFO basis. In addition, the note to the financial statements indicates the nature of the change, why the company made the change, and the years affected. The note also provides data on important differences between the amounts reported under LIFO versus FIFO. (When identifying the significant differences, some companies show the **entire** financial statements and line-by-line differences between LIFO and FIFO.)

Retained Earnings Adjustment As indicated earlier, one of the disclosure requirements is to show the cumulative effect of the change on retained earnings as of the beginning of the earliest period presented. For Lancer Company, that date is January 1, 2024. Lancer disclosed that information by means of a narrative description (see Note A in Illustration 21.5). Lancer also would disclose this information in its retained earnings statement. **Illustration 21.6** shows Lancer's retained earnings statement under LIFO, before giving effect to the change in accounting principle (this information comes from Illustration 21.3).

ILLUSTRATION 21.6 Retained Earnings Statements (LIFO)

	2025	2024	2023
Retained earnings, January 1	$220,000	$120,000	$ 0
Net income	87,000	100,000	120,000
Retained earnings, December 31	$307,000	$220,000	$120,000

Example 21.2 Recast Retained Earnings Statement

FACTS Refer to the information in Illustrations 21.4 and 21.6. The difference between the retained earnings balances under LIFO and FIFO is computed as follows.

Retained earnings, January 1, 2024 (FIFO)	$122,000
Retained earnings, January 1, 2024 (LIFO)	(120,000)
Cumulative effect difference	$ 2,000

QUESTION How would Lancer's retained earnings statement be presented in 2025, given the change in the accounting principle in 2025?

SOLUTION

Comparative retained earnings statements for 2024 and 2025, given the effect of the change to the FIFO method, are as follows.

	2025	2024
Retained earnings, January 1, as reported		$120,000
Add: Adjustment for the cumulative effect on prior years of applying retrospectively the new method of accounting for inventory		2,000
Retained earnings, January 1, as adjusted	$225,000	122,000
Net income (FIFO)	89,000	103,000
Retained earnings, December 31	$314,000	$225,000

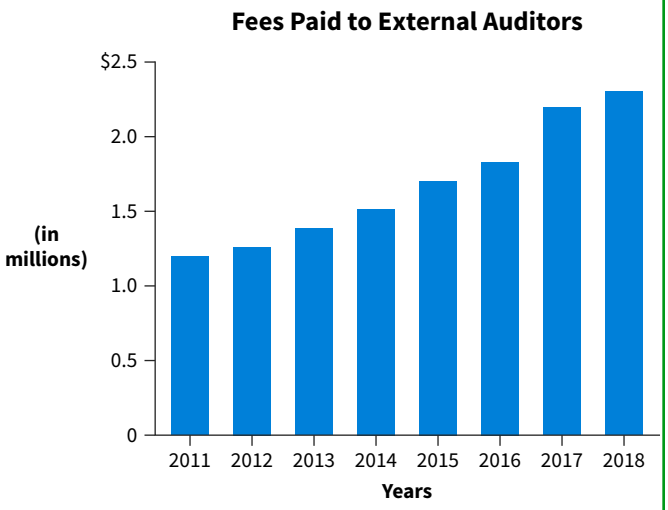
As indicated, Lancer adjusted the beginning balance of retained earnings on January 1, 2024, for the excess of FIFO net income over LIFO net income in 2023. The $2,000 difference is referred to as the cumulative effect. This comparative presentation indicates the type of adjustment that a company needs to make. It follows that the amount of this adjustment could be much larger if a number of prior periods involved.

Accounting Matters — The Cost of Change

Recently, companies have faced an increase of new accounting rules and regulatory changes. New rules on revenue recognition, leases, and credit losses are just a few of the accounting changes companies have had to manage. In times of change, companies turn to their external auditors to assist in complying with new rules. This assistance comes at a cost.

The adjacent graph shows that average audit fees for public companies have increased every year since 2011. The average hourly fees publicly traded companies paid to their external auditors have increased by 31% over the past decade, to $283 per hour in 2018. Audit fees are expected to continue growing as executives face more accounting complexity and regulators require auditors to disclose more about their audit processes.

Source: Mark Maurer, "Companies Shell Out More in Audit Fees to Tackle Accounting Rule Changes," *Wall Street Journal* (January 15, 2020).



Source: Financial Education and Research Foundation.

Other Accounting Change Issues

Additional considerations related to changes in accounting principles include the following.

- Direct and indirect effects.
- Impracticability.
- Non-qualifying changes.

Direct and Indirect Effects of Changes

Are there other effects that a company should report when it makes a change in accounting principle? For example, what happens when a company like Lancer has a bonus plan based on net income and the prior year's net income changes when FIFO is retrospectively applied? Should Lancer also change the reported amount of bonus expense? The answer depends on whether the effects are direct or indirect.

Direct Effects The FASB takes the position that companies should retrospectively apply the **direct effects of a change in accounting principle**. An example of a **direct effect** is an adjustment to an inventory balance as a result of a change in the inventory valuation method. For example, a company should change the inventory amounts in prior periods to indicate a change from LIFO to the FIFO method of inventory valuation. Another inventory-related example would be an impairment adjustment resulting from applying the lower-of-cost-or-net realizable value or the lower-of-cost-or-market test to the adjusted inventory balance. Related changes, such as deferred income tax effects of the impairment adjustment, are also considered direct effects.

Indirect Effects In addition to direct effects, companies can have **indirect effects related to a change in accounting principle**. An **indirect effect** is any change to current or future cash flows of a company that results from making a change in accounting principle that is applied retrospectively (see **Global View**). An example of an indirect effect is a change in profit-sharing or royalty payment that is based on a reported amount such as revenue or net income. **Indirect effects do not change prior period amounts.**

Global View

IFRS does not explicitly address the accounting and disclosure of indirect effects. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

Example 21.3 Indirect Effects of a Change in Accounting Principle

FACTS Continuing with the Lancer example, assume now that Lancer has an employee profit-sharing plan based on net income. As Illustration 21.2 showed, Lancer would report higher income in 2023 and 2024 if it used the FIFO method. In addition, let's assume that the profit-sharing plan requires that Lancer pay the incremental amount due based on the FIFO income amounts.

QUESTION How should Lancer report this additional expense caused by the change to the FIFO method?

SOLUTION

In this situation, Lancer reports this additional expense **in the current period**; it would not change prior periods for this expense. If the company prepares comparative financial statements, it follows that it does not recast the prior periods for this additional expense.

If the terms of the profit-sharing plan indicate that **no payment is necessary** in the current period due to this change, then the company need not recognize additional profit-sharing expense in the current period. Neither does it change amounts reported for prior periods. Lancer should report this additional expense **in the current period only**. If Lancer prepares comparative financial statements, it follows that it **does not recast** the prior periods for this additional indirect expense.[4]

When a company recognizes the indirect effects of a change in accounting principle, it includes in the financial statements a description of the indirect effects. In doing so, it discloses the amounts recognized in the current period and related per share information.

Impracticability

It is not always possible for companies to determine how they would have reported prior periods' financial information under retrospective application of a change in accounting principle. Retrospective application is considered **impracticable** if a company cannot determine the prior period effects using every reasonable effort to do so.

[4]The rationale for this approach is that companies should recognize, in the period the adoption occurs (not the prior period), the effect on the cash flows that is caused by the adoption of the new accounting principle. That is, the accounting change is a necessary "past event" in the definition of an asset or liability that gives rise to the accounting recognition of the indirect effect in the current period. **[4]**

Companies should **not** use retrospective application if one of the following conditions exists.

1. The company cannot determine the effects of the retrospective application.
2. Retrospective application requires assumptions about management's intent in a prior period.
3. Retrospective application requires significant estimates for a prior period, and the company cannot objectively verify the necessary information to develop these estimates.

If any of the above conditions exists, it is deemed impracticable to apply the retrospective approach. In this case, the company **prospectively applies** the new accounting principle as of the earliest date it is practicable to do so. [5]

Example 21.4
Impracticability of Retrospective Application

FACTS Williams Company changed its inventory method from FIFO to LIFO, effective January 1, 2025. Williams prepares statements on a calendar-year basis and has used the FIFO method since its inception. Williams judges it impracticable to retrospectively apply the new method.

QUESTION How should Williams account for this change in accounting principle?

SOLUTION

Using the retrospective approach for a change to LIFO is generally considered impracticable because determining prior period effects would require subjective assumptions about the LIFO layers established in prior periods. These assumptions would ordinarily result in the computation of several different earnings figures.

Therefore, the only adjustment necessary is to adjust the beginning inventory to establish the beginning LIFO layer. Williams must disclose only the effect of the change on the results of operations in 2025, the period of change.

When a company cannot retrospectively account for a change to LIFO, it should explain the reasons for omitting the computations of the cumulative effect for prior years. It should also disclose the justification for the change to LIFO. [6][5] Illustration 21.7, from the annual report of **The Quaker Oats Company**, shows the type of disclosure needed.

ILLUSTRATION 21.7
Disclosure of Change to LIFO

The Quaker Oats Company

Note 1 (In Part): Summary of Significant Accounting Policies

Inventories. Inventories are valued at the lower of cost or market, using various cost methods, and include the cost of raw materials, labor, and overhead. The percentage of year-end inventories valued using each of the methods is as follows:

	June 30	
	Current Year	**Prior Year**
Average quarterly cost	21%	54%
Last-in, first-out (LIFO)	65%	29%
First-in, first-out (FIFO)	14%	17%

Effective July 1, the Company adopted the LIFO cost flow assumption for valuing the majority of remaining U.S. Grocery Products inventories. The Company believes that the use of the LIFO method better matches current costs with current revenues. The cumulative effect of this change on retained earnings at the beginning of the year is not determinable, nor are the pro-forma effects of retroactive application of LIFO to prior years. The effect of this change on current-year fiscal results was to decrease net income by $16.0 million, or $.20 per share.

If the LIFO method of valuing certain inventories were not used, total inventories would have been $60.1 million higher in the current year, and $24.0 million higher in the prior year.

[5]In practice, many companies defer the formal adoption of LIFO until year-end. Management thus has an opportunity to assess the impact that a change to LIFO will have on the financial statements and to evaluate the desirability of a change for tax purposes. As indicated in Chapter 7, many companies use LIFO because of the advantages of this inventory valuation method in a period of inflation.

In summary, when a company has a change in accounting principle, the preferred method of accounting for the change is the retrospective approach. However, sometimes it is impracticable to apply the change retrospectively, so the alternative is to account for the change prospectively. Typically, when a new standard requires a change in accounting principle, the FASB provides guidance for how companies should account for the change. If the retrospective approach is deemed impracticable, the FASB provides companies with other alternatives for recognizing and reporting the change in accounting principle.

Non-Qualifying Changes

Not all changes qualify as a change in accounting principle. Here are two situations in which a change has occurred but does not qualify as a change in accounting principle.

- **Adoption of an accounting principle for new transactions.** When a company is recognizing events that have happened for the first time or that were previously immaterial, it is **not an accounting principle change**. For example, a change in accounting principle has not occurred when a company adopts an inventory method (e.g., FIFO) for **newly** acquired items of inventory, even if FIFO differs from that used for **previously recorded** inventory. Another example is certain marketing expenditures that were previously immaterial and expensed in the period incurred. It would not be considered a change in accounting principle if they become material and are acceptably deferred and amortized.
- **Correction of an error.** What if a company previously followed an accounting principle that was not acceptable? Or what if the company applied a principle incorrectly? These are considered corrections of errors, **not an accounting principle change**. For example, a switch from the cash (income tax) basis of accounting to the accrual basis is a correction of an error. Or, if a company deducted salvage value when computing double-declining depreciation on plant assets and later recomputed depreciation without deducting estimated salvage value, it has corrected an error. Accounting for correction of errors will be covered later in this chapter.

Put It into Practice LO 21.1

Account for Changes in Accounting Principle

FACTS Denson Company has been in business for many years, but 2023 was the first year of operations for its construction division. Denson reports its financial information on a calendar-year basis. The beginning balance of retained earnings on January 1, 2023, was $1,360,000. Denson has accounted for its income from long-term construction contracts at a point in time using the cost-recovery method.

In 2025, as a result of adopting the revenue standard, the company changed to recognizing revenue over time (percentage-of-completion method). For tax purposes, the company uses the cost-recovery method and plans to continue doing so in the future. (We assume a 20% enacted tax rate.) The following shows portions of three income statements for 2023–2025—for both the cost-recovery and percentage-of-completion methods.

Cost-Recovery Method
Denson Company
Income Statement (partial)
For the Year Ended December 31

	2023	2024	2025
Income before income tax	$400,000	$160,000	$190,000
Income tax (20%)	80,000	32,000	38,000
Net income	$320,000	$128,000	$152,000

Percentage-of-Completion Method
Denson Company
Income Statement (partial)
For the Year Ended December 31

	2023	2024	2025
Income before income tax	$600,000	$180,000	$200,000
Income tax (20%)	120,000	36,000	40,000
Net income	$480,000	$144,000	$160,000

INSTRUCTIONS

a. Record the adjusting entry necessary to record a change from the cost-recovery to the percentage-of-completion method in 2025.

b. Prepare Denson's income statement and retained earnings statement for 2025 and 2024 using the percentage-of-completion method.

SOLUTION

a. The entry to record the accounting change at the beginning of 2025 is as follows.

Construction in Process	220,000	
Deferred Tax Liability		44,000
Retained Earnings		176,000

To determine the impact of changing to the percentage-of-completion method, Denson calculates the difference in income for the years prior to the year of change (2025). Changes in revenue will also trigger changes in taxes owed. The analysis is as follows.

Pretax Income from	2023	2024	Totals
Percentage-of-completion	$600,000	$180,000	$780,000
Cost-recovery	400,000	160,000	560,000
Difference in income	200,000	20,000	220,000
Multiply by 20% tax rate	(40,000)	(4,000)	(44,000)
Income effect (net of tax)	$160,000	$ 16,000	$176,000

Recall that with the percentage-of-completion method, gross profit is recognized over the course of the construction period. Under the cost-recovery method, gross profit is not recognized until all costs are recovered. If percentage-of-completion had been used from the start, Denson would have reported $220,000 **more** income resulting in $44,000 additional tax for a net increase in income of $176,000.

The credit to Deferred Tax Liability represents the adjustment for temporary differences arising in prior years. In 2023 and 2024, taxable income using cost-recovery is less than pretax financial income using percentage-of-completion. This temporary difference creates a deferred tax liability. Construction in Process is the asset account impacted by the change to the new accounting principle. Under percentage-of-completion, gross profit recognized each year is debited to Construction in Process. Therefore, if percentage-of-completion had been used from the beginning, the balance in the Construction in Process account would be $220,000 higher. By debiting Construction in Process for $220,000, the account is now "up-to-date" for 2025.

b. Denson's comparative financial statements are prepared as follows.

Income Statement:
The income statements for the percentage-of-completion method are as follows.

Denson Company
Income Statement (partial)
For the Year Ended

	2025	2024
Income before income tax	$200,000	$180,000
Income tax (20%)	40,000	36,000
Net income	$160,000	$144,000

Retained Earnings Statement:
If the percentage-of-completion method had been used in 2023, retained earnings would have been $160,000 higher. This is reported in the retained earnings statements for 2025 and 2024 as follows.

Denson Company
Retained Earnings Statement
For the Year Ended

	2025	2024
Retained earnings, January 1, as reported		$1,680,000*
Add: Adjustment for the cumulative effect on prior years of applying retrospectively the new method of accounting for construction contracts		160,000**
Retained earnings, January 1, as adjusted	$1,984,000	1,840,000
Net income	160,000	144,000
Retained earnings, December 31	$2,144,000	$1,984,000

*$1,360,000 + $320,000	
**Retained earnings, January 1, 2024 (percentage-of-completion)	$1,840,000
Retained earnings, January 1, 2024 (cost-recovery)	(1,680,000)
Cumulative-effect difference	$ 160,000

21.2 Other Accounting Changes

LEARNING OBJECTIVE 2

Describe the accounting for changes in estimates and changes in the reporting entity.

Changes in Accounting Estimates

To prepare financial statements, companies must estimate the effects of future conditions and events. For example, the following items require estimates.

1. Uncollectible receivables.
2. Inventory obsolescence.
3. Useful lives and salvage values of assets.
4. Periods benefited by deferred costs.
5. Liabilities for warranty costs and income taxes.
6. Recoverable mineral reserves.
7. Depreciation methods.

A company cannot predict future conditions and events and their effects with certainty. Therefore, estimation requires the exercise of judgment. Accounting estimates will change as new events occur, as a company acquires more experience, or as it obtains additional information.

Prospective Reporting

When companies have a **change in accounting estimate**, it is reported **prospectively.** Companies should not adjust previously reported results for changes in estimates. Instead, they account for the effects of all changes in estimates in either:

- The period of change if the change affects that period only.
- The period of change and future periods if the change affects both.

The FASB views changes in estimates as **normal recurring corrections and adjustments**, which are the natural result of the accounting process. It prohibits retrospective treatment.

The circumstances related to a change in estimate differ from those for a change in accounting principle. If companies reported changes in estimates retrospectively, continual adjustments of prior years' income would occur. It seems proper to accept the view that, because new conditions or circumstances exist, the revision fits the new situation, and not the old one. Companies should therefore handle such a revision in the current and future periods.

Example 21.5 Change in Estimate

FACTS Underwriters Labs Inc. purchased for $300,000 a building that it originally estimated to have a useful life of 15 years and no salvage value. It recorded depreciation for 5 years on a straight-line basis. On January 1, 2025, Underwriters Labs revises the estimate of the useful life. It now considers the asset to have a total life of 25 years. (Assume that the useful life for financial reporting and tax purposes and depreciation method are the same.)

QUESTION What journal entry would you prepare to record depreciation expense for 2025?

SOLUTION

Using the straight-line method, depreciation expense has been $20,000 per year ($300,000 ÷ 15 years). The book value of the building at January 1, 2025, is as follows.

Buildings	$300,000
Less: Accumulated depreciation—buildings (5 × $20,000)	100,000
Book value of building at January 1, 2025	$200,000

In 2025, Underwriters Labs changes its estimate of useful life to a total of 25 years. Since 5 years have already passed, 20 years remain to depreciate the building. Depreciation expense will be calculated based on the book value at January 1, 2025, as follows.

$$\frac{\textbf{Book Value of Asset}}{\textbf{Remaining Useful Life}} = \textbf{Depreciation Charge}$$

$$\frac{\$200{,}000}{(25 \text{ years} - 5 \text{ years})} = \$10{,}000$$

Underwriters Labs records depreciation for the year 2025 as follows.

Depreciation Expense	10,000	
Accumulated Depreciation—Buildings		10,000

Depreciation will continue at $10,000 per year unless another change in estimate is made. Underwriters Labs accounts for this change in estimate in the current and future periods only.

Differentiating a Change in Estimate and a Change in Accounting Principle

Companies sometimes find it difficult to differentiate between a change in estimate and a change in accounting principle. Is it a change in principle or a change in estimate when a company changes from deferring and amortizing marketing costs to expensing them as incurred because future benefits of these costs have become doubtful?

- If it is impossible to determine whether a change in principle or a change in estimate has occurred, the rule is this: **Consider the change as a change in estimate.**
- This is often referred to as a **change in estimate effected by a change in accounting principle**.

An example of a change in estimate effected by a change in principle is a change in depreciation, amortization, or depletion methods. Because companies change depreciation methods based on changes in estimates about future benefits from long-lived assets, it is not possible to separate the effect of the accounting principle change from that of the estimates. **As a result, companies account for a change in depreciation methods as a change in estimate effected by a change in accounting principle.** [7]

Example 21.6 Change in Depreciation Method

FACTS Rush Inc. changed depreciation methods in 2025 from double-declining-balance to straight-line. Depreciation prior to 2025 under double-declining-balance was $180,000, whereas straight-line depreciation prior to 2025 would have been $100,000. Rush's depreciable assets subject to the change had a cost of $500,000 with an $80,000 salvage value, and a 10-year remaining useful life at the beginning of 2025.

QUESTION What entry would you recommend Rush make in 2025, if any, related to depreciation for these assets?

SOLUTION

The journal entry for depreciation in 2025 is as follows.

Depreciation Expense ($240,000* ÷ 10)	24,000	
Accumulated Depreciation		24,000

*Cost of depreciable assets	$500,000
Accumulated depreciation	(180,000)
Book value at January 1, 2025	320,000
Salvage value	(80,000)
Depreciable base	$240,000

This is a change in estimate effected by a change in accounting principle. As a result, there is no adjustment for prior-year effects. Rush determines depreciation expense in 2025 and future years on a prospective basis.

Differentiating a Change in Estimate and a Correction of an Error A similar problem occurs in differentiating between a change in estimate and a correction of an error, although here the answer is more clear-cut. How does a company determine whether it overlooked the information in earlier periods (an error), or whether it obtained new information (a change in estimate)? Proper classification is important because the accounting treatment differs for corrections of errors versus changes in estimates.

- The general rule is this: **Companies should consider careful estimates that later prove to be incorrect as changes in estimate.**
- Only when a company obviously computed the estimate incorrectly because of lack of expertise or in bad faith should it consider the adjustment an error.

There is no clear demarcation line here. Companies must use good judgment in light of all the circumstances.[6]

Disclosures

Illustration 21.8 shows disclosure of a change in estimated useful lives, which appeared in the annual report of **Microsoft Corporation**.

ILLUSTRATION 21.8 Disclosure of Change in Estimated Useful Lives

Microsoft Corporation

Note 1: Accounting Policies, Estimates and Assumptions.
In July 2020, we completed an assessment of the useful lives of our server and network equipment and determined we should increase the estimated useful life of server equipment from three years to four years and increase the estimated useful life of network equipment from two years to four years. This change in accounting estimate was effective beginning fiscal year 2021. Based on the carrying amount of server and network equipment included in property and equipment, net as of June 30, 2020, the effect of this change in estimate for fiscal year 2021 was an increase in operating income of $2.7 billion and net income of $2.3 billion, or $0.30 per both basic and diluted share.

[6]In evaluating reasonableness, the auditor should use one or a combination of the following approaches.

a. Review and test the process used by management to develop the estimate.

b. Develop an independent expectation of the estimate to corroborate the reasonableness of management's estimate.

c. Review subsequent events or transactions occurring prior to completion of fieldwork.

See AU-C Section 540, "Auditing Accounting Estimates, Including Fair Value Accounting Estimates, and Related Disclosures," *Statement on Auditing Standards No. 122*. Effective for audits of financial statements for periods ending on or after December 15, 2012. [Predecessor literature: "Auditing Accounting Estimates," *Statement on Auditing Standards No. 57* (New York: AICPA, 1988).]

For the most part, companies need not disclose changes in accounting estimates made as part of normal operations, such as bad debt allowances or inventory obsolescence, unless such changes are material. However, for a change in estimate that affects several periods (such as a change in the service lives of depreciable assets), companies should disclose the effect on income from continuing operations and related per share amounts of the current period.

When a company has a change in estimate effected by a change in accounting principle, it must indicate why the new method is preferable. In addition, companies are subject to all other disclosure guidelines established for changes in accounting principle.

Changes in Reporting Entity

Occasionally, companies make changes that result in different reporting entities. Companies report the **change retrospectively by changing the financial statements of all prior periods presented**. The revised statements show the financial information for the **new reporting entity** for all periods. Examples of a **change in reporting entity** include the following.

1. Presenting consolidated statements in place of statements of individual companies.
2. Changing specific subsidiaries that constitute the group of companies for which the entity presents consolidated financial statements.
3. Changing the companies included in combined financial statements.
4. Changing the cost, equity, or consolidation method of accounting for subsidiaries and investments. In this case, a change in the reporting entity does not result from creation, cessation, purchase, or disposition of a subsidiary or other business unit.[7]

In the year in which a company changes a reporting entity, it should disclose in the financial statements the nature of the change and the reason for it. It also should report, for all periods presented, the effect of the change on income from continuing operations, net income, and earnings per share. These disclosures need not be repeated in subsequent periods' financial statements.

Illustration 21.9 shows a note disclosing a change in reporting entity, from the annual report of **Hewlett-Packard Company**.

Hewlett-Packard Company

Note: Accounting and Reporting Changes (In Part)

Consolidation of Hewlett-Packard Finance Company. The company implemented a new accounting pronouncement on consolidations. With the adoption of this new pronouncement, the company consolidated the accounts of Hewlett-Packard Finance Company (HPFC), a wholly owned subsidiary previously accounted for under the equity method, with those of the company. The change resulted in an increase in consolidated assets and liabilities but did not have a material effect on the company's financial position. Since HPFC was previously accounted for under the equity method, the change did not affect net earnings. Prior years' consolidated financial information has been restated to reflect this change for comparative purposes.

ILLUSTRATION 21.9 Disclosure of Change in Reporting Entity

Put It into Practice LO 21.2

Account for Changes in Accounting Estimates

FACTS During 2025, Lopez Company changed from the double-declining balance method for its building to the straight-line method. The building was purchased on January 1, 2023, and originally cost $600,000. It had a useful life of 20 years and a salvage value of $20,000. Depreciation on both bases for 2023 and 2024 is as follows.

	2023	2024
Straight-line	$29,000	$29,000
Declining-balance	60,000	54,000

INSTRUCTIONS

Prepare the journal entry to record depreciation expense for 2025.

[7] An exception to retrospective application occurs when changing from the equity method. We provide an expanded illustration of the accounting for a change from or to the equity method in Appendix 21A.

SOLUTION

A change in depreciation method is considered a **change in estimate effected by a change in accounting principle** that should be accounted for prospectively. Lopez will use straight-line beginning in 2025 and will not retrospectively adjust prior financial statements. Computations to determine depreciation expense for 2025 are as follows.

Cost of the building		$600,000
Less: Prior depreciation expense		
2023	$60,000	
2024	54,000	114,000
Book value at January 1, 2025		486,000
Less: Salvage value		20,000
Remaining depreciable cost		$466,000

Since 2 years of depreciation expense have been recognized, the remaining useful life is 18 years (20 years – 2 years). Revised depreciation using straight-line is:

$$\frac{\$466,000}{18 \text{ years}} = \$25,889$$

The journal entry for 2025 is as follows.

Depreciation Expense	25,889	
Accumulated Depreciation—Buildings		25,889

21.3 Accounting Errors

LEARNING OBJECTIVE 3

Describe the accounting for correction of errors.

No business, large or small, is immune from errors. Certain errors, such as misclassifications of balances within a financial statement, are not as significant to investors as other errors. For example, significant errors would be those resulting in overstating assets or income. However, investors should know the potential impact of all errors. Even "harmless" misclassifications can affect important ratios. Also, some errors could signal important weaknesses in internal controls that could lead to more significant errors. Illustration 21.10 lists common types of errors and an example of each.

ILLUSTRATION 21.10 Common Types of Accounting Errors

Accounting Error	Example
A change from an accounting principle that is **not generally accepted** to an accounting principle that is acceptable	Changing from the cash basis of accounting to the accrual basis. The rationale is that the company incorrectly presented prior periods because of the application of an improper accounting principle.
Mathematical mistakes	Incorrectly totaling the inventory count sheets when computing the inventory value.
Changes in estimates that occur because a company did not prepare the estimates in good faith	Adopting a clearly unrealistic depreciation rate.
An oversight	Failing to accrue or defer certain expenses and revenues at the end of the period.
A misuse of facts	Failing to use salvage value in computing the depreciation base for the straight-line method.
Incorrect classification	Classifying a cost as an expense instead of an asset, and vice versa.

Accounting errors occur for a variety of reasons. **Illustration 21.11** indicates eight major categories of accounting errors that drive restatements.

ILLUSTRATION 21.11 Accounting-Error Types

Accounting Category	Type of Restatement
Expense recognition	Recording expenses in the incorrect period or for an incorrect amount.
Revenue recognition	Improper revenue accounting. This category includes instances in which revenue was improperly recognized, questionable revenues were recognized, or any other number of related errors that led to misreported revenue.
Misclassification	Misclassifying significant accounting items on the balance sheet, income statement, or statement of cash flows. These include restatements due to misclassification of short- or long-term accounts or those that impact cash flows from operations.
Allowances/contingencies	Errors involving bad debts related to accounts receivable, inventory reserves, income tax allowances, and loss contingencies.
Long-lived assets	Asset impairments of property, plant, and equipment; goodwill; or other related items.
Taxes	Errors involving correction of tax provision, improper treatment of tax liabilities, and other tax-related items.
Equity—other comprehensive income	Improper accounting for comprehensive income equity transactions including foreign currency items, unrealized gains and losses on certain investments in debt securities and derivatives.
Inventory	Inventory costing valuations, quantity issues, and cost of sales adjustments.

Sources: T. Baldwin and D. Yoo, "Restatements—Traversing Shaky Ground," *Trend Alert*, Glass Lewis & Co. (June 2, 2005), p. 8; and "2017 Financial Restatements Review," *Audit Analytics* (June 2018).

As soon as a company discovers an error, it must correct the error. Remember that revenue and expense accounts from prior periods have been closed to retained earnings. Therefore, companies record corrections of errors from prior periods as an adjustment to the beginning balance of retained earnings in the current period. These corrections to retained earnings are called **prior period adjustments**.[8] **[8]** The correcting journal entry also adjusts asset and liability accounts that are impacted by the error.

- If it presents comparative statements, a company should restate the prior statements affected to correct for the error.
- The term **restatement** is used for the process of revising previously issued financial statements to report correction of an error.
- This term distinguishes an error correction from a change in accounting principle in which the term recast or revise is used. **[9]**

Prior Period Adjustments and Restatements

We illustrate the accounting for an error correction, using an example involving Selectro Company. In 2026, the bookkeeper for Selectro discovered an error. In 2025, the company failed to record $20,000 of depreciation expense on a newly constructed building. This building is the only depreciable asset Selectro owns. The company correctly included the depreciation expense in its tax return and correctly reported its income taxes payable using a tax rate of 20%. **Illustration 21.12** presents Selectro's income statement for 2025 (starting with income before depreciation expense) with and without the error.

[8] See Mark L. Defond and James Jiambalvo, "Incidence and Circumstances of Accounting Errors," *The Accounting Review* (July 1991) for examples of different types of errors and why these errors might have occurred.

ILLUSTRATION 21.12 Error Correction Comparison

Selectro Company
Income Statement
For the Year Ended December 31, 2025

	Without Error		With Error	
Income before depreciation expense		$100,000		$100,000
Depreciation expense		20,000		–0–
Income before income tax		80,000		100,000
Current income tax expense	$16,000		$16,000	
Deferred income tax expense	–0–	16,000	4,000	20,000
Net income		$ 64,000		$ 80,000

Illustration 21.13 shows the entries that Selectro should have made and did make for recording depreciation expense and income taxes in 2025.

ILLUSTRATION 21.13 Error Entries

Entries Company Should Have Made (Without Error)

Depreciation Expense	20,000	
Accumulated Depreciation—Buildings		20,000
Income Tax Expense	16,000	
Income Taxes Payable		16,000

Entries Company Did Make (With Error)

No entry made for depreciation

Income Tax Expense	20,000	
Deferred Tax Liability		4,000
Income Taxes Payable		16,000

Because Selectro did not record depreciation expense of $20,000 in 2025, a temporary difference between pretax financial income and taxable income occurred which created a deferred tax liability in 2025. Therefore, that deferred tax liability was recorded because of the error.

Example 21.7 Income Statement and Balance Sheet Effects

FACTS Illustration 21.12 shows the income statement comparison of the error correction, and Illustration 21.13 shows a comparison of the correct and incorrect journal entries.

QUESTION How does the error affect specific items on Selectro's income statement and balance sheet for 2025?

SOLUTION

The $20,000 omission error in 2025 results in the following effects.

Income statement effects:

Depreciation expense (2025) is understated $20,000.

Income tax expense (2025) is overstated $4,000 ($20,000 × .20).

Net income (2025) is overstated $16,000 ($80,000 − $64,000).

Balance sheet effects:

Accumulated depreciation—buildings is understated $20,000.

Deferred tax liability is overstated $4,000 ($20,000 × .20).

Once Selectro has analyzed the impact of the error on the 2025 accounts, the company can make a correcting entry in 2026 to record the prior period adjustment to the opening balance of retained earnings.

The correcting entry in 2026 is as follows.

Retained Earnings (prior period adjustment)	16,000	
Deferred Tax Liability	4,000	
Accumulated Depreciation—Buildings		20,000

The debit to Deferred Tax Liability is made to remove this account, which was caused by the error. The credit to Accumulated Depreciation—Buildings reduces the book value of the building to its proper amount. Selectro will make the same correcting entry in 2026 whether it prepares single-period (noncomparative) or comparative financial statements.

Selectro may prepare single-period statements or comparative financial statements. If comparative statements are prepared, then prior periods must be restated to report the correction of the error.

Example 21.8 Single-Period Statements

FACTS Continuing the Selectro example, assume that Selectro has a beginning retained earnings balance at January 1, 2026, of $350,000. The company reports net income of $400,000 in 2026.

QUESTION Prepare Selectro's retained earnings statement for 2026. Discuss how the 2026 income statement and balance sheet are affected as a result of the error from 2025.

SOLUTION

Selectro will include the prior period adjustment, determined above, in the 2026 retained earnings statement as follows.

Selectro Company
Retained Earnings Statement
For the Year Ended December 31, 2026

Retained earnings, January 1, as reported		$350,000
Correction of an error (depreciation)	$20,000	
Less: Applicable income tax reduction	4,000	(16,000)
Retained earnings, January 1, as adjusted		334,000
Add: Net income		400,000
Retained earnings, December 31		$734,000

The balance sheet in 2026 would not have any deferred tax liability related to the building, and Accumulated Depreciation—Buildings is now restated at a higher amount. The income statement would not be affected.

If preparing comparative financial statements, a company should make adjustments to correct the amounts for all affected accounts reported in the statements for **all periods** reported. The company should restate the data to the correct basis for each year presented. It should **show any catch-up adjustment as a prior period adjustment to retained earnings for the earliest period it reported**. These requirements are essentially the same as those for reporting a change in accounting principle.

Example 21.9 Comparative Statements

FACTS Selectro prepares comparative financial statements for 2026 and 2025. The error of omitting depreciation expense of $20,000 in 2025, discovered in 2026, results in a restatement of the 2025 financial statements.

QUESTION Which accounts would be restated in the 2025 financial statements?

SOLUTION

The following accounts are restated in the 2025 financial statements.

In the income statement:

Depreciation expense—buildings	$20,000 increase
Income tax expense	4,000 decrease
Net income	16,000 decrease

In the retained earnings statement:

Retained earnings, ending balance (due to lower net income for the period)	$16,000 decrease

In the balance sheet:

Accumulated depreciation—buildings	$20,000 increase
Deferred tax liability	4,000 decrease
Retained earnings, ending balance	16,000 decrease

Selectro prepares the 2026 financial statements in comparative form with those of 2025 **as if the error had not occurred**. If the error had occurred in an earlier year, say 2024, then the 2025 retained earnings statement would show a prior period adjustment.

Selectro must also disclose that it has restated its previously issued financial statements, and it describes the nature of the error. Selectro must disclose the following.

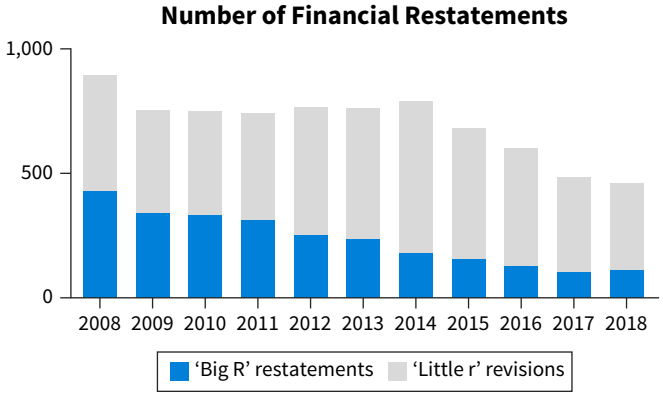
1. The effect of the correction on each financial statement line item and any per share amounts affected for each prior period presented.
2. The cumulative effect of the change, or prior period adjustment, on retained earnings or other appropriate components of equity or net assets in the statement of financial position, as of the beginning of the earliest period presented. **[10]**

Analytics in Action: Big R versus Little r

When errors in the financial statements are identified, they should be corrected. The accounting and reporting of the error depends on the **materiality** of the error to the current and prior period financial statements. In practice, public companies implement one of the following three methods for correcting an error.

1. **Out-of-period adjustment**. These errors are immaterial to both the current and prior period financial statements. An aggregate adjustment is made to the current period, and prior period financial statements are not restated.
2. **"Little r" restatement**. These errors are immaterial to prior period financial statements but material in the aggregate to the current period financial statements. An aggregate adjustment is made in the current period, and prior period financial statements are revised to correct for the error. A disclosure is included that describes the error. A publicly traded company does **not** have to amend its previously filed 10-K and 10-Q reports.
3. **"Big R" restatement**. These errors are material to prior periods. A company is required to restate previously issued financial statements and include disclosures about the error. A publicly traded company is required to file Form 8-K and warn investors that previously issued financial statements can no longer be relied upon. It must also amend its previously filed 10-K and 10-Q reports.

The requirement to alert investors about Big R restatements went into effect in the mid-2000s. The following graph shows a comparison of the number of Big R and Little r restatements reported from 2008 through 2018.



Source: Audit Analytics.

Notice the number of Big R restatements has decreased dramatically since the requirement went into effect. Why has this occurred? One study showed that revisions to correct potentially serious misstatements were associated with decreases in stock prices. Therefore, company executives may be motivated to downplay their accounting errors to minimize the impact on the company's stock price. Determining if an error qualifies as a Big R or Little r misstatement can be subjective and subject to management bias.

Sources: Jean Eaglesham, "Shh! Companies Are Fixing Accounting Errors Quietly," *Wall Street Journal* (December 5, 2019); and Kati Manyak, "Error Corrections: A Look at Adjustments and Restatement Trends," *Audit Analytics* (January 11, 2019).

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Summary of Accounting Changes and Correction of Errors

Having guidelines for reporting accounting changes and corrections has helped resolve several significant and long-standing accounting problems. Yet, because of diversity in situations and characteristics of the items encountered in practice, use of professional judgment is of paramount importance.

- In applying these guidelines, the primary objective is to serve the users of the financial statements.
- Achieving this objective requires accuracy, full disclosure, and an absence of misleading inferences. (see **Underlying Concepts**).

Illustration 21.14 summarizes the main distinctions and treatments presented in the discussion in this chapter.

Underlying Concepts

Neutrality is an important element of faithful representation.

ILLUSTRATION 21.14 Summary of Guidelines for Accounting Changes and Errors

Changes in Accounting Principle
Employ the retrospective approach by: **a.** Changing the financial statements of all prior periods presented. **b.** Disclosing in the year of the change the effect on net income and earnings per share for all prior periods presented. **c.** Reporting an adjustment to the beginning retained earnings balance in the retained earnings statement in the earliest year presented. If impracticable to determine the prior period effect (e.g., change to LIFO): **a.** Do not change prior years' income. **b.** Use opening inventory in the year the method is adopted as the base-year inventory for all subsequent LIFO computations. **c.** Disclose the effect of the change on the current year, and the reasons for omitting the computation of the cumulative effect and pro forma amounts for prior years.
Changes in Accounting Estimate
Employ the current and prospective approach by: **a.** Reporting current and future financial statements on the new basis. **b.** Presenting prior period financial statements as previously reported. **c.** Making no adjustments to current-period opening balances for the effects in prior periods.
Changes in Reporting Entity
Employ the retrospective approach by: **a.** Restating the financial statements of all prior periods presented. **b.** Disclosing in the year of change the effect on net income and earnings per share data for all prior periods presented.
Changes Due to Error
Employ the restatement approach by: **a.** Correcting all prior period statements presented. **b.** Restating the beginning balance of retained earnings for the first period presented when the error effects occur in a period prior to the first period presented.

Changes in accounting principle are appropriate **only** when a company demonstrates that the newly adopted generally accepted accounting principle is **preferable** to the existing one. Companies and accountants determine preferability on the basis of whether the new principle constitutes an **improvement in financial reporting**, not on the basis of the income tax effects or other incentives.[9]

[9]A change in accounting principle, a change in the reporting entity (special type of change in accounting principle), and a correction of an error require an explanatory paragraph in the auditor's report discussing lack of consistency from one period to the next. A change in accounting estimate does not affect the auditor's opinion relative to consistency. However, if the change in estimate has a material effect on the financial statements, disclosure may still be required. Error correction not involving a change in accounting principle does not require disclosure relative to consistency.

But it is not always easy to determine an improvement in financial reporting. **How does one measure preferability or improvement?** Such measurement varies from company to company. **Quaker Oats Company**, for example, argued that a change in accounting principle to LIFO inventory valuation "better matches current costs with current revenues" (see Illustration 21.7). Conversely, another company might change from LIFO to FIFO because it wishes to report a more realistic ending inventory. How do you determine which is the better of these two arguments? Determining the preferable method requires some "standard" or "objective." Because no universal standard or objective is generally accepted, the problem of determining preferability continues to be difficult.

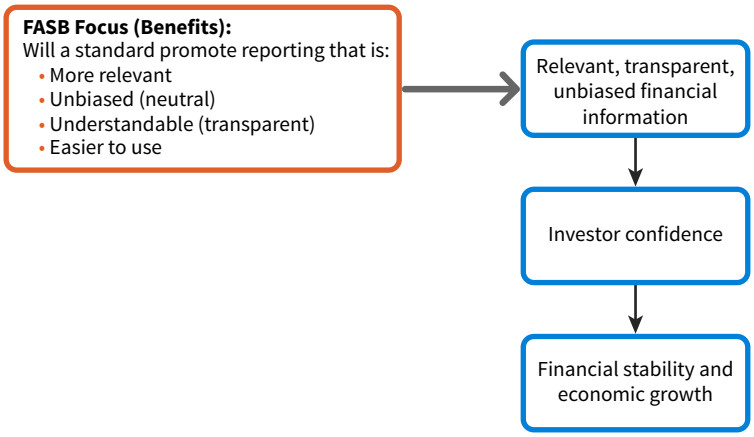
Initially, the SEC took the position that the auditor should indicate whether a change in accounting principle was preferable. The SEC has since modified this approach, noting that greater reliance may be placed on management's judgment in assessing preferability. Even though the preferability criterion is difficult to apply, the general guidelines have acted as a deterrent to capricious changes in accounting principles.[10] **If a FASB rule creates a new principle, expresses preference for, or rejects a specific accounting principle, a change is considered clearly acceptable.**

Accounting Matters — What's Your Motivation?

LIFO or FIFO? Straight-line or accelerated? Companies have choices in the accounting standards they apply. And while the goal is to choose the standards that best represent the economic activity of the organization, there are other motivations. Managers have self-interest in how the financial statements make the company look. Naturally, they wish to show their financial performance in the best light. Research provides insights into why companies may prefer certain accounting methods.

1. **Political costs.** Taxes, regulation, and antitrust considerations are just a few of the political pressures that impact how and why a company may choose a certain accounting policy over another. Researchers have found that the larger the company, the more likely it is exposed to political pressures and, hence, the more likely to adopt income-decreasing approaches in selecting accounting methods.
2. **Capital structure.** A number of studies have indicated that the capital structure of the company can affect the selection of accounting methods. For example, a company with a high debt to equity ratio is more likely to be constrained by debt covenants. The debt covenant may indicate that the company cannot pay dividends if retained earnings fall below a certain level. As a result, such a company is more likely to select accounting methods that will increase net income.
3. **Bonus payments.** Higher net income generally leads to a higher bonus. Research confirms that managers will select accounting methods that maximize net income when their bonus is tied to this metric.
4. **Smooth earnings.** Volatility or consistency? Consistency please—and the market agrees! In general, management tends to believe that a steady 10% growth each year is much better than a 30% growth one year followed by a 10% decline the next year. For this reason, managers may choose accounting methods that help them smooth their earnings into a nice and predictable growth pattern.

Standard-setters are acutely aware of the pressures on management when choosing accounting methods. In response, the FASB completes a thorough cost-benefit analysis of all standards, as the following graphic shows.



According to the FASB, rather than giving undue weight to economic consequences, the objective in developing accounting standards is to show a complete and unbiased picture of a company's financial position and performance. The bottom line is that better information leads to better outcomes.

Sources: Ross L. Watts and Jerold L. Zimmerman, "Positive Accounting Theory: A Ten-Year Perspective," *The Accounting Review* (January 1990); and O. Douglas Moses, "Income Smoothing and Incentives: Empirical Tests Using Accounting Changes," *The Accounting Review* (April 1987). Graphic from the FASB website showing how cost-benefit differs from an analysis of economic consequences.

[10] If management has not provided reasonable justification for the change in accounting principle, the auditor should express a qualified opinion. Or, if the effect of the change is sufficiently material, the auditor should express an adverse opinion on the financial statements. See AU-C Section 508, "Reports on Audited Financial Statements," *Statement on Auditing Standards No. 122.* Effective for audits of financial statements for periods ending on or after December 15, 2012. [Predecessor literature: "Reports on Audited Financial Statements," *Statement on Auditing Standards No. 58* (New York: AICPA, 1988).]

FACTS Briggs Company is in the process of adjusting and correcting its books at the end of 2025. Briggs purchased a patent at the beginning of 2023 for $55,000. Briggs has not amortized the patent because its value has not diminished. The patent has a useful life of 10 years from the year it was purchased.

INSTRUCTIONS

Prepare the journal entry on December 31, 2025, to correct the error. Assume straight-line amortization.

SOLUTION

Briggs should have recorded amortization expense for 2023, 2024, and 2025. Amortization expense is calculated as follows.

$55,000 ÷ 10 years = $5,500 amortization expense per year

For 2025, amortization expense of $5,500 must be recorded because the books are still open. For 2023 and 2024, the amortization expense of $11,000 ($5,500 × 2) must be debited to Retained Earnings. The Patents account will be decreased, or credited, for the accumulated amortization for 3 years. The correcting entry is as follows.

December 31, 2025

Amortization Expense	5,500	
Retained Earnings ($5,500 × 2)	11,000	
Patents		16,500

Put It into Practice LO 21.3
Account for Errors

21.4 Error Analysis

LEARNING OBJECTIVE 4

Analyze the effects of errors.

In this section, we show some additional types of accounting errors. Companies generally do not correct for errors that do not have a significant effect on the presentation of the financial statements. For example, should a company with a total annual payroll of $1,750,000 and net income of $940,000 correct its financial statements if it finds it failed to record accrued wages of $5,000? No—it would not consider this error significant or material.

Obviously, defining materiality is difficult, and managers and auditors must use experience and judgment to determine whether adjustment is necessary for a given error. We assume **all errors discussed in this section to be material and to require adjustment**. (Also, we ignore all tax effects in this section.)

Companies must answer three questions in error analysis:

1. What type of error is involved?
2. What entries are needed to correct for the error?
3. After discovery of the error, how are financial statements to be restated?

As discussed earlier, companies treat errors **as prior period adjustments and report them in the current year as adjustments to the beginning balance of Retained Earnings**. If a company presents comparative statements, it restates the prior affected statements to correct for the error.

Reclassification Errors

Reclassification errors are those that only affect presentation of items within the balance sheet or the income statement.

Balance Sheet Errors

Balance sheet errors affect only the presentation of an asset, liability, or stockholders' equity account. Examples of errors are the classification of a:

- Short-term receivable as part of the investment section.
- Note payable as an account payable.
- Plant asset as inventory.

When the error is discovered, the company reclassifies the item to its proper position. If the company prepares comparative statements that include the error year, it should correctly restate the balance sheet for the error year.

Income Statement Errors

Income statement errors involve the improper classification of revenues or expenses. Examples of improper classification include recording:

- Interest revenue as part of sales.
- Purchases as bad debt expense.
- Depreciation expense as interest expense.

An income statement classification error has no effect on the balance sheet and **no effect on net income**.

A company must make a reclassification entry when it discovers the error, if it makes the discovery in the same year in which the error occurs. If the error occurred in prior periods, the company does not need to make a reclassification entry at the date of discovery because the accounts for the current year are correctly stated. (Remember that the company has closed the income statement accounts from the prior period to retained earnings.) If the company prepares comparative statements that include the error year, it restates the income statement for the error year.

Balance Sheet and Income Statement Errors

Another type of error involves both the balance sheet and income statement. For example, assume that the bookkeeper overlooked accrued wages payable at the end of the accounting period. The effect of this error is to understate expenses, understate liabilities, and overstate net income for that period of time. This type of error affects both the balance sheet and the income statement. We classify this type of error in one of two ways—counterbalancing or noncounterbalancing.

- **Counterbalancing errors** are those that will be offset or corrected over two periods. For example, the failure to record accrued wages is a counterbalancing error because over a two-year period the error will no longer be present. In other words, the failure to record accrued wages in the previous period means:

  1. Net income for the first period is overstated.
  2. Accrued wages payable (a liability) is understated.
  3. Wages expense is understated.

  In the next period, net income is understated, accrued wages payable (a liability) is correctly stated, and wages expense is overstated. For the two **years combined**:

  1. Net income is correct.
  2. Wages expense is correct.
  3. Accrued wages payable at the end of the second year is correct.

  Most errors in accounting that affect both the balance sheet and income statement are counterbalancing errors.

- **Noncounterbalancing errors** are those that are **not** offset in the next accounting period. An example would be the failure to capitalize equipment that has a useful life of five years. If we expense this asset immediately, expenses will be overstated in the first period but understated in the next four periods. At the end of the second period, the effect of the error is not fully offset. Net income is correct in the aggregate only at the end of five years because the asset is fully depreciated at this point. Therefore, **noncounterbalancing errors are those that take longer than two periods to correct themselves**.

Only in rare instances is an error never reversed. An example would be if a company initially expenses land. Because land is not depreciable, theoretically the error is never offset, unless the land is sold.

Counterbalancing Errors

The method of correcting a counterbalancing error depends primarily on when the error is discovered. If the error is discovered after the two years have passed, and the error has already counterbalanced, then no correcting entry is required. But remember, if a company presents comparative statements, it must restate the amounts for comparative purposes. **Restatement is necessary even if a correcting journal entry is not required.**

Example 21.10 Counterbalancing Error

FACTS Sanford Cement Co. failed to accrue revenue in 2023 when it fulfilled its performance obligation but recorded the revenue in 2024 when it received payment. The company discovered the error in 2026.

QUESTIONS (a) How should Sanford correct the error? (b) If Sanford presents comparative financial statements for 2023 through 2026, do prior periods require restatement?

SOLUTION

a. The error occurred in 2023 and was offset, or corrected, by the end of 2024. No correcting entry is needed because the effects have been counterbalanced by the time Sanford discovered the error in 2026 and retained earnings is properly stated.

b. Sanford must restate the accounts and amounts for the years 2023 and 2024 since they are being shown in comparative form with the 2025 and 2026 financial statements.

When a counterbalancing error is discovered in the first or second year, the method of correcting it depends on the combination of two factors: (1) has the company closed its books for the current year and (2) has the error already counterbalanced. Illustration 21.15 summarizes various combinations of these two factors and the procedure required to correct the error.

ILLUSTRATION 21.15 Procedures for Correcting an Error

	Books Closed for the Current Year	Books Not Closed for the Current Year
Error is already counterbalanced	No entry is necessary	Make an entry to correct the error in the current period and to adjust the beginning balance of retained earnings
Error is not yet counterbalanced	Make an entry to adjust the present balance of retained earnings	Make an entry to adjust the beginning balance of retained earnings

Notice that three of the combinations in Illustration 21.15 require a journal entry, and one does not.

We examine examples of counterbalancing errors, based on transactions for Hurley Enterprises. Use Illustration 21.15 as a guide to determine how to correct the errors.

Example 21.11 Failure to Record Accrued Wages

FACTS On December 31, 2025, Hurley did not accrue wages in the amount of $1,500. The error is discovered at the end of 2026 before the books are closed.

QUESTIONS (a) What is the impact of this error on 2025 and 2026 financial statement items? (b) What action, if any, should Hurley take to correct the error?

SOLUTION

a. In 2025, Hurley failed to make the following entry.

Salaries and Wages Expense	1,500	
Salaries and Wages Payable		1,500

Therefore, the error impacts 2025 items as follows.

- Salaries and Wages Expense is understated by $1,500.
- Net income and Retained Earnings are overstated by $1,500.
- Salaries and Wages Payable is understated by $1,500.

In 2026, Hurley actually pays the $1,500 wages and makes the following entry.

Salaries and Wages Expense	1,500	
Cash		1,500

Therefore, the error impacts 2026 items as follows.

- Salaries and Wages Expense is overstated by $1,500. The $1,500 expense should have been recorded in 2025 and then paid in 2026.
- Since the $1,500 is paid in 2026, the balance in Salaries and Wages Payable would be zero. No adjustment is needed to the payable because there is no longer an obligation.

b. The books for 2026 have not been closed, and the error is already counterbalanced. Therefore, Hurley should make an entry to correct the error in the current period. The entry in 2026 to correct this error is as follows.

Retained Earnings	1,500	
Salaries and Wages Expense		1,500

The debit to Retained Earnings will appear as a prior period adjustment to the beginning balance of Retained Earnings for 2026.

Example 21.12 Failure to Record Prepaid Expenses

FACTS In January 2025, Hurley purchased a 2-year insurance policy costing $1,000. It debited Insurance Expense and credited Cash. The company made no adjusting entries at the end of 2025. The error is discovered at the end of 2026 before the books are closed.

QUESTIONS (a) What is the impact of this error on 2025 and 2026 financial statement items? (b) What action, if any, should Hurley take to correct the error?

SOLUTION

a. The policy is for 2 years. In 2025, Hurley should have recorded the insurance policy as Prepaid Insurance and adjusted at the end of the year to recognize half, $500, as insurance expense. Therefore, the error impacts 2025 items as follows.

- Insurance Expense is overstated by $500.
- Net income and Retained Earnings are understated by $500.
- Prepaid Insurance is understated by $500.

The insurance policy expires at the end of 2026. If no correcting entry is made in 2026, the error impacts 2026 items as follows.

- Insurance Expense is understated by $500.
- Net income and Retained Earnings are overstated by $500.
- No adjustment is needed to Prepaid Insurance because by the end of 2026 the policy has expired.

b. The books for 2026 have not been closed, and the error is already counterbalanced. Therefore, Hurley should make an entry to correct the error in the current period. The entry in 2026 to correct this error is as follows.

Insurance Expense	500	
Retained Earnings		500

The credit to Retained Earnings will appear as a prior period adjustment to the beginning balance of Retained Earnings for 2026.

Example 21.13 Overstatement of Accrued Revenue

FACTS On December 31, 2025, Hurley accrued as interest revenue $8,000 that applied to the first 3 months of 2026. On that date, the company recorded a debit to Interest Receivable and a credit to Interest Revenue. The error is discovered at the end of 2026 before the books are closed.

QUESTIONS (a) What is the impact of this error on 2025 and 2026 financial statement items? (b) What action, if any, should Hurley take to correct the error?

SOLUTION

a. The interest should not have been accrued in 2025. Therefore, the error impacts 2025 items as follows.

- Interest Revenue is overstated by $8,000.
- Net income and Retained Earnings are overstated by $8,000.
- Interest Receivable is overstated by $8,000.

The interest revenue should be recorded in 2026. If no correcting entry is made, the error impacts 2026 items as follows.

- Interest Revenue is understated by $8,000.
- Net income and Retained Earnings are understated by $8,000.
- No adjustment is needed to Interest Receivable because by the end of 2026 the interest has already been received.

b. The books for 2026 have not been closed, and the error is already counterbalanced. Therefore, Hurley should make an entry to correct the error in the current period. The entry in 2026 to correct this error is as follows.

Retained Earnings	8,000	
Interest Revenue		8,000

The debit to Retained Earnings will appear as a prior period adjustment to the beginning balance of Retained Earnings for 2026.

Examples 21.11, 21.12, and 21.13 illustrate that if a company's books are still open in the second year of the error, an entry can be made to correct current year accounts and adjust the opening balance of Retained Earnings. **If a company has closed the books for the second year, in Hurley's case 2026, it makes no correcting entry because the errors are counterbalanced.**

Noncounterbalancing Errors

The entries for noncounterbalancing errors are more complex. Companies must make correcting entries, even if they have closed the books.

Example 21.14 Failure to Record Depreciation

FACTS On January 1, 2025, Hurley Enterprises purchased a machine for $10,000 that had an estimated useful life of 5 years. The accountant incorrectly expensed this machine in 2025 but discovered the error in 2026. Hurley uses straight-line depreciation on this asset.

QUESTIONS What entry would you record to correct for this error on December 31, 2026, given that (a) Hurley has not closed the books, and (b) Hurley has closed the books.?

SOLUTION

Since the machine was expensed in 2025, expenses in 2025 were overstated by $10,000, causing Net income and Retained Earnings to be understated by $10,000. Assets for 2025 are understated because the machine was not recorded as an asset. Also, Hurley should have recorded one year of depreciation expense in 2025. Annual depreciation on the machine using straight-line is as follows.

$$\$10{,}000 \div 5 \text{ years} = \$2{,}000 \text{ depreciation expense per year}$$

a. If Hurley has not closed the books for 2026, the correcting entry is as follows.

Equipment (at cost)	10,000	
Depreciation Expense (for 2026)	2,000	
Retained Earnings		8,000*
Accumulated Depreciation—Equipment (2,000 × 2)		4,000

*Overstatement of expense in 2025	$10,000
Proper depreciation for 2025	(2,000)
Retained earnings understated as of Dec. 31, 2025	$ 8,000

b. If Hurley has closed the books for 2026, the correcting entry is as follows.

Equipment (at cost)	10,000	
Retained Earnings		6,000*
Accumulated Depreciation—Equipment		4,000

*Retained earnings understated as of Dec. 31, 2025	$ 8,000
Proper depreciation for 2026	(2,000)
Retained earnings understated as of Dec. 31, 2026	$ 6,000

Example 21.15 Failure to Adjust for Bad Debts

FACTS Companies sometimes use a direct write-off method in accounting for bad debt expense when an expected credit loss method (using an allowance) is more appropriate. Assume that Hurley determined bad debt expense under the direct write-off and expected credit loss methods as follows.

	2025	2026
Direct write-off	$550	$1,290
Expected credit losses	800	1,500

QUESTIONS Prepare the journal entry to correct for this error on December 31, 2026, given that (a) Hurley has not closed the books, and (b) Hurley has closed the books.

SOLUTION

Analyze the amount of the error each year as follows.

	2025	2026
Bad debt expense recorded each year	$550	$1,290
Correct bad debt expense	800	1,500
Bad debt adjustment to correct for error	$250	$ 210

a. If Hurley has not closed the books for 2026, the correcting entry is as follows.

Bad Debt Expense	210	
Retained Earnings	250	
Allowance for Doubtful Accounts		460

Allowance for doubtful accounts: Additional $250 for 2025 and $210 for 2026.

b. If Hurley has closed the books for 2026, the correcting entry is:

Retained Earnings ($250 + $210)	460	
Allowance for Doubtful Accounts		460

Comprehensive Example: Numerous Errors

In some circumstances, a combination of errors occurs. The company therefore prepares a worksheet to facilitate the analysis. The following problem demonstrates use of the worksheet. The mechanics of its preparation should be obvious from the solution format. The income statements of Hudson Company for the years ended December 31, 2024, 2025, and 2026, indicate the following net incomes.

2024	$17,400
2025	20,200
2026	11,300

An examination of the accounting records for these years indicates that Hudson Company made several errors in arriving at the net income amounts reported:

1. The company consistently omitted from the records wages earned by workers but not paid at December 31. The amounts omitted were:

December 31, 2024	$1,000
December 31, 2025	1,400
December 31, 2026	1,600

   When paid in the year following that in which they were earned, Hudson recorded these amounts as expenses.
2. The company overstated merchandise inventory on December 31, 2024, by $1,900 as the result of errors made in the footings and extensions on the inventory sheets.
3. On December 31, 2025, Hudson expensed prepaid insurance of $1,200, applicable to 2026.
4. The company did not record on December 31, 2025, interest receivable in the amount of $240.
5. On January 2, 2025, Hudson sold for $1,800 a piece of equipment costing $3,900. At the date of sale, the equipment had accumulated depreciation of $2,400. The company recorded the cash received as Miscellaneous Income in 2025. In addition, the company continued to record depreciation for this equipment in both 2025 and 2026 at the rate of 10% of cost.

The first step in preparing the worksheet is to prepare a schedule showing the reported net income amounts for the years ended December 31, 2024, 2025, and 2026. Each correction of the amount originally reported is clearly labeled. The next step is to indicate the balance sheet accounts affected as of December 31, 2026. **Illustration 21.16** shows the completed worksheet for Hudson Company.

ILLUSTRATION 21.16 Worksheet to Correct Income and Balance Sheet Errors

Hudson Company
Worksheet to Correct Income and Balance Sheet Errors

		Worksheet Analysis of Changes in Net Income				Balance Sheet Correction at December 31, 2026		
		2024	2025	2026	Totals	Debit	Credit	Account
4	Net income as reported	$17,400	$20,200	$11,300	$48,900			
5	Wages unpaid, 12/31/24	(1,000)	1,000		–0–			
6	Wages unpaid, 12/31/25		(1,400)	1,400	–0–			
7	Wages unpaid, 12/31/26			(1,600)	(1,600)		$1,600	Salaries and Wages Payable
8	Inventory overstatement, 12/31/24	(1,900)	1,900		–0–			
9	Prepaid insurance, 12/31/25		1,200	(1,200)	–0–			
10	Interest receivable, 12/31/25		240	(240)	–0–			
11	Correction for entry made upon sale of equipment, 1/2/25[a]		(1,500)		(1,500)	$2,400		Accumulated Depreciation—Equipment
							3,900	Equipment
12	Overcharge of depreciation, 2025		390		390	390		Accumulated Depreciation—Equipment
13	Overcharge of depreciation, 2026			390	390	390		Accumulated Depreciation—Equipment
14	Corrected net income	$14,500	$22,030	$10,050	$46,580			
15	[a]Cost	$ 3,900						
16	Less: Accumulated depreciation	2,400						
17	Book value	1,500						
18	Less: Proceeds from sale	1,800						
19	Gain on sale	300						
20	Income reported	(1,800)						
21	Adjustment	$(1,500)						

The correcting entries on December 31, 2026, assuming the books have not or have been closed, are as follows.

Hudson Company Has Not closed the Books for 2026

Retained Earnings	1,400	
Salaries and Wages Expense		1,400
(To correct improper charge to salaries and wages expense for 2026)		
Salaries and Wages Expense	1,600	
Salaries and Wages Payable		1,600
(To record proper salaries and wages expense for 2026)		
Insurance Expense	1,200	
Retained Earnings		1,200
(To record proper insurance expense for 2026)		
Interest Revenue	240	
Retained Earnings		240
(To correct improper credit to Interest Revenue in 2026)		
Retained Earnings	1,500	
Accumulated Depreciation—Equipment	2,400	
Equipment		3,900
(To record write-off of equipment in 2025 and adjustment of Retained Earnings)		
Accumulated Depreciation—Equipment	780	
Depreciation Expense		390
Retained Earnings		390
(To correct improper charge for depreciation expense in 2025 and 2026)		

Hudson Company Has Closed the Books for 2026

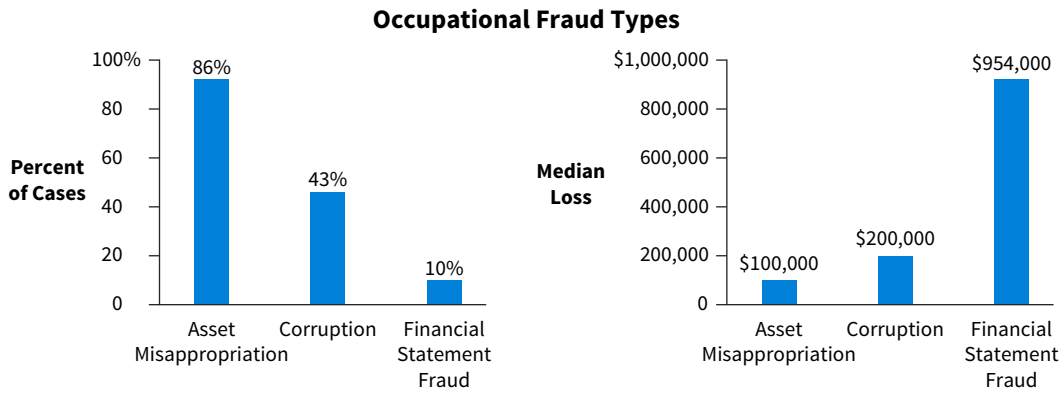
Retained Earnings	1,600	
Salaries and Wages Payable		1,600
(To record proper salaries and wages expense for 2026)		
Retained Earnings	1,500	
Accumulated Depreciation—Equipment	2,400	
Equipment		3,900
(To record write–off of equipment in 2025 and adjustment of Retained Earnings)		
Accumulated Depreciation—Equipment	780	
Retained Earnings		780
(To correct improper charge for depreciation expense in 2025 and 2026)		

What Do the Numbers Mean?

Guard the Financial Statements!

Restatements sometimes occur because of financial fraud, which involves the intentional misstatement or omission of material information in an organization's financial reports. A recent study by the Association of Certified Fraud Examiners produced the following charts, which show the three main categories of occupational fraud, or fraud committed by individuals against the companies who employ them.

This study found that financial statement fraud accounted for the lowest percentage of total occupational frauds studied but accounted for the largest median loss of $954,000. This amounts to a monthly loss of $39,800 to the organization over the time the fraud took place. Moreover, the study found that 14% of all occupational frauds were perpetrated by an employee in an accounting role!



Financial statement fraud includes both over- and understating net income and includes errors that result from timing differences in when revenues and expenses are recorded, fictitious revenues, concealed liabilities and expenses, improper asset valuations, and improper disclosures. Financial fraud is risky business for companies. Sound internal controls and a strong governance system are an important step to keeping a company's assets safe, along with a solid understanding of generally accepted accounting principles!

Source: *Report to the Nations 2020 Global Study on Occupational Fraud and Abuse*, Association of Certified Fraud Examiners (2020).

Preparation of Financial Statements with Error Corrections

Up to now, our discussion of error analysis has focused on identifying the type of error involved and accounting for its correction in the records. We have noted that companies must present the correction of the error on comparative financial statements. The following example illustrates how a company would restate a typical year's financial statements, given many different errors.

Dick & Wally's Outlet is a small retail outlet in the town of Holiday. Lacking expertise in accounting, the company does not keep adequate records, and numerous errors occurred in recording accounting information.

1. The bookkeeper inadvertently failed to record a cash receipt of $1,000 on the sale of merchandise in 2026.
2. Accrued wages expense at the end of 2025 was $2,500; at the end of 2026, $3,200. The company does not accrue for wages; all wages are charged to Administrative Expenses.
3. The company had not set up an allowance for estimated uncollectible receivables. Dick and Wally decided to set up such an allowance for the estimated probable losses, as of December 31, 2026, for 2025 accounts of $700, and for 2026 accounts of $1,500. They also decided to correct the charge against each year so that it shows the losses (actual and estimated) relating to that year's sales. The company has written off accounts to bad debt expense (selling expense) as follows.

	In 2025	In 2026
2025 accounts	$400	$2,000
2026 accounts		1,600

4. Prepaid insurance not recorded at the end of 2025 was $600, and at the end of 2026, $400. All insurance is charged to Administrative Expenses.
5. An account payable of $6,000 should have been a note payable.
6. During 2025, the company sold for $7,000 an asset that cost $10,000 and had a book value of $4,000. At the time of sale, Cash was debited and Miscellaneous Income was credited for $7,000.
7. As a result of the last transaction, the company overstated depreciation expense (an administrative expense) in 2025 by $800 and in 2026 by $1,200.

Illustration 21.17 presents a worksheet that begins with the unadjusted trial balance of Dick & Wally's Outlet. You can determine the correcting entries and their effect on the financial statements by examining the worksheet.

ILLUSTRATION 21.17 Worksheet to Analyze Effect of Errors in Financial Statements

Dick & Wally's Outlet
Worksheet Analysis to Adjust Financial Statements for the Year 2026

		Trial Balance Unadjusted		Adjustments				Income Statement Adjusted		Balance Sheet Adjusted	
		Dr.	Cr.		Dr.		Cr.	Dr.	Cr.	Dr.	Cr.
	Cash	3,100		(1)	1,000					4,100	
	Accounts Receivable	17,600								17,600	
	Notes Receivable	8,500								8,500	
	Inventory	34,000								34,000	
	Property, Plant, and Equipment	112,000				(6)	10,000[a]			102,000	
	Accumulated Depreciation—Equipment		83,500	(6)	6,000[a]						75,500
				(7)	2,000						
	Investments	24,300								24,300	
	Accounts Payable		14,500	(5)	6,000						8,500
	Notes Payable		10,000			(5)	6,000				16,000
	Capital Stock		43,500								43,500
	Retained Earnings		20,000	(3)	2,700[b]						
				(6)	4,000[a]	(4)	600				
				(2)	2,500	(7)	800				12,200
	Sales Revenue		94,000			(1)	1,000		95,000		
	Cost of Goods Sold	21,000						21,000			
	Selling Expenses	22,000				(3)	500[b]	21,500			
	Administrative Expenses	23,000		(2)	700	(4)	400	22,700			
				(4)	600	(7)	1,200				
	Totals	265,500	265,500								
	Salaries and Wages Payable					(2)	3,200				3,200
	Allowance for Doubtful Accounts					(3)	2,200[b]				2,200
	Prepaid Insurance			(4)	400					400	
	Net Income							29,800			29,800
	Totals				25,900		25,900	95,000	95,000	190,900	190,900

Computations:

[a]Machinery

Proceeds from sale	$ 7,000
Book value of machinery	(4,000)
Gain on sale	3,000
Less: Income credited	7,000
Retained earnings adjustment	$(4,000)

[b]Bad Debts

	2025	2026
Bad debts charged for	$2,400	$1,600
Additional bad debts anticipated	700	1,500
	3,100	3,100
Charges currently made to each year	(400)	(3,600)
Bad debt adjustment	$2,700	$ (500)

Put It into Practice LO 21.4
Analyze Errors

FACTS Clarke Industries is in the process of closing its books for 2026. The accounting team has discovered the following errors:

1. On December 31, 2025, Clarke received $50,000 as a prepayment for renting office space for the following year. At the time of the receipt of the rent payment, the company recorded a debit to Cash and a credit to Rent Revenue. It made no adjusting entry as of December 31, 2025.
2. Clarke's accountant recorded a purchase of merchandise for $9,000 in 2025 that applied to 2026. The physical ending inventory for 2025 was correctly stated. The company uses the periodic inventory method.
3. At the beginning of 2024, the company purchased a machine for $500,000 (salvage value of $50,000) that had a useful life of 5 years. The bookkeeper used straight-line depreciation but failed to deduct the salvage value in computing the depreciation base for the 3 years.

INSTRUCTIONS

For each item, (a) determine if the error is counterbalancing or noncounterbalancing, and (b) prepare the correcting entry, if necessary.

SOLUTION

1. This is a counterbalancing error. On December 31, 2025, the prepayment should have been recorded as Unearned Rent Revenue, not as Rent Revenue. Rent Revenue, net income, and Retained Earnings for 2025 are overstated by $50,000. The entry on December 31, 2026, to correct the opening balance of retained earnings and properly record rent revenue in 2026 is as follows.

Retained Earnings	50,000	
Rent Revenue		50,000

2. This is a counterbalancing error. Purchases for 2025 are overstated, and net income and Retained Earnings for 2025 are understated by $9,000. The entry on December 31, 2026, to correct the opening balance of retained earnings and properly record purchases in 2026 is as follows.

Purchases	9,000	
Retained Earnings		9,000

3. This is a noncounterbalancing error. The error is analyzed as follows.

Incorrect calculation of depreciation expense = $500,000 ÷ 5 years
= $100,000 per year, recorded in 2024, 2025, 2026

Correct calculation of depreciation expense = ($500,000 - $50,000) ÷ 5 years
= $90,000 per year

	2024 and 2025	2026
Depreciation taken (incorrect, $100,000 per year)	$200,000	$100,000
Less: Correct depreciation ($90,000 per year)	180,000	90,000
Difference to correct	$ 20,000	$ 10,000

The entry on December 31, 2026, to correct the opening balance of Retained Earnings and correct depreciation expense for 2026 is as follows.

Accumulated Depreciation	30,000	
Depreciation Expense		10,000
Retained Earnings		20,000

APPENDIX 21A

Changing from or to the Equity Method

LEARNING OBJECTIVE *5

Make the computations and prepare the entries necessary to record a change from or to the equity method of accounting.

As noted in the chapter, companies generally should report an accounting change that results in financial statements for a different entity by **changing the financial statements of all prior periods presented**.

An example of a change in reporting entity is when a company's level of ownership or influence changes, such as when it changes from or to the equity method. When changing **from or to** the equity method, companies use prospective application. We present examples of these changes in entity in the following two sections.

Change from the Equity Method

If the investor level of influence or ownership falls below that necessary for continued use of the equity method, a company must change from the equity method to the fair value method. The earnings or losses that the investor previously recognized under the equity method should **remain as part of the carrying amount** of the investment, with no retrospective application to the new method.

When a company changes **from the equity method to the fair value method**, **the cost basis for accounting purposes is the carrying amount of the investment at the date of the change**. The investor applies the new method in its entirety once the equity method is no longer appropriate. At the next reporting date, the investor should record the unrealized holding gain or loss in income to recognize the difference between the carrying amount and fair value.[11]

Dividends in Excess of Earnings

In subsequent periods, dividends received by the investor company may exceed its share of the investee's earnings for such periods (all periods following the change in method). To the extent that they do so, the investor company should account for such dividends as a **reduction of the investment carrying amount**, rather than as revenue. The reason: Dividends in excess of earnings are viewed as a liquidating dividend, with this excess then accounted for as a reduction of the equity investment.

To illustrate, on January 1, 2024, Investor Company purchased 250,000 shares of Investee Company's 1,000,000 shares of outstanding stock for $8,500,000. Investor correctly accounted for this investment using the equity method. After accounting for dividends received and investee net income, in 2024 Investor reported its investment in Investee Company at $8,780,000 at December 31, 2024. On January 2, 2025, Investee Company sold 1,500,000 additional shares of its own common stock to the public, thereby reducing Investor Company's ownership from 25% to 10%. Illustration 21A.1 shows the net income (or loss) and dividends of Investee Company for the years 2025 through 2027.

ILLUSTRATION 21A.1 Income Earned and Dividends Received

Year	Investor's Share of Investee Income (Loss)	Investee Dividends Received by Investor
2025	$600,000	$ 400,000
2026	350,000	400,000
2027	–0–	210,000
Totals	$950,000	$1,010,000

[11] A retrospective application for this type of change is impracticable in many cases. Determining fair values on a portfolio basis for securities in previous periods may be quite difficult. As a result, prospective application is used.

Assuming a change from the equity method to the fair value method as of January 2, 2025, Investor Company's reported investment in Investee Company and its reported income would be as shown in Illustration 21A.2.

ILLUSTRATION 21A.2 Impact on Investment Carrying Amount

Year	Dividend Revenue Recognized	Cumulative Excess of Share of Earnings over Dividends Received	Investment at December 31
2025	$400,000	$200,000[a]	$8,780,000
2026	400,000	150,000[b]	8,780,000
2027	150,000	(60,000)[c]	$8,780,000 − $60,000 = $8,720,000

[a]$600,000 − $400,000 = $200,000
[b]($350,000 − $400,000) + $200,000 = $150,000
[c]$150,000 − $210,000 = $(60,000)

Investor Company would record the dividends and earnings data for the three years subsequent to the change in methods as shown by the following entries.

2025 and 2026

Cash	400,000	
Dividend Revenue		400,000
(To record dividend received from Investee Company)		

2027

Cash	210,000	
Equity Investments		60,000
Dividend Revenue		150,000
(To record dividend revenue from Investee Company in 2027 and to recognize cumulative excess of dividends received over share of Investee earnings in periods subsequent to change from the equity method)		

Change to the Equity Method

When converting to the equity method, companies use the prospective approach. Recall that under this approach, companies do not adjust opening balances to record the change in principle on prior reported results. Instead, they account for the effects of the change in (1) the period of change if the change affects that period only, or (2) the period of change and future periods if the change affects both. In applying the prospective approach to the change to the equity method, the investor company should add the cost of acquiring the additional interest in the investee company to the cost basis of their previously held interest (the present stock holding). [11][12]

For example, Exact Technology on January 1, 2025, purchases a 10% stock interest in Cellular4D that costs $850,000. Exact Technology uses the fair value method to account for its

[12]At one time, when an investment qualified for use of the equity method because of an increase in the level of ownership interest or degree of influence, the investor had to retroactively restate the investment, results of operations, and retained earnings, which often was a very complex task. The FASB decided that the retroactive method was too costly and time-consuming to implement, and of little benefit to users. See *FASB Accounting Standards Update No. 2016-07*, "Simplifying the Transition to the Equity Method of Accounting" (March 2016).

interest in Cellular4D by adjusting its cost basis to fair value at the end of a reporting period. The entry to record the purchase of Cellular4D on January 1, 2025, is as follows.

January 1, 2025

Equity Investments	850,000	
Cash		850,000

At December 31, 2025, the fair value of Exact Technology's investment is $1,000,000. The entry to record the excess of the fair value over its cost for Exact Technology's investment is as follows.

December 31, 2025

Fair Value Adjustment	150,000	
Unrealized Holding Gain or Loss—Income		
($1,000,000 − $850,000)		150,000

On January 1, 2026, Exact Technology now purchases an additional 20% stock interest in Cellular4D for $4,000,000. Because of this additional investment, Exact Technology now exerts significant influence over the operations of Cellular4D. Exact Technology must use the equity method to account for this investment. Exact Technology adds the cost of acquiring the additional interest in Cellular4D of $4,000,000 to its original cost basis of $850,000 to determine a new cost basis in Cellular4D of $4,850,000 ($4,000,000 + $850,000).

Exact Technology makes the following entry to record this additional investment in Cellular4D.

January 1, 2026

Equity Investment (Cellular4D)	4,000,000	
Cash		4,000,000

Exact Technology then reclassifies its existing balance in the investment account as follows.

January 1, 2026

Equity Investment (Cellular4D)	850,000	
Equity Investments		850,000

In addition, Exact Technology must adjust the fair value accounts when it changes to the equity method. The entry to record this transaction is as follows.

January 1, 2026

Retained Earnings	150,000	
Fair Value Adjustment ($1,000,000 – $850,000)		150,000

Exact Technology now reports an equity investment at $4,850,000. Subsequently, Exact Technology will adjust the cost basis of $4,850,000 for changes in the net income and dividends of Cellular4D under the equity method as discussed in Chapter 16.

Review and Practice

Key Terms Review

change in accounting estimate 21-14
change in accounting principle 21-3
change in estimate effected by a change in accounting principle 21-15
change in reporting entity 21-17
correction of an error 21-12
counterbalancing errors 21-26
cumulative effect 21-3
direct effects of a change in accounting principle 21-10
impracticable 21-10
indirect effects of a change in accounting principle 21-10
noncounterbalancing errors 21-26
prior period adjustments 21-19
prospectively 21-3
restatement 21-19
retrospective application 21-2

Learning Objectives Review

1 Discuss the types of accounting changes and the accounting for changes in accounting principles.

The three different types of accounting changes are as follows. (1) *Change in accounting principle*: a change from one generally accepted accounting principle to another generally accepted accounting principle. (2) *Change in accounting estimate:* a change that occurs as the result of new information or as additional experience is acquired. (3) *Change in reporting entity:* a change from reporting as one type of entity to another type of entity.

A **change in accounting principle** involves a change from one generally accepted accounting principle to another.

The general requirement for changes in accounting principle is **retrospective application**. Under retrospective application, companies change prior years' financial statements on a basis consistent with the newly adopted principle. They treat any part of the effect attributable to years prior to those presented as an adjustment of the earliest retained earnings presented. However, retrospective application is impracticable if the prior period effect cannot be determined using every reasonable effort to do so. For example, in changing to LIFO, the base-year inventory for all subsequent LIFO calculations is generally the opening inventory in the year the company adopts the method. There is no restatement of prior years' income because it is often too impractical to do so.

A change in accounting principle is not considered to result from the adoption of a new principle in recognition of events that have occurred for the first time or that were previously immaterial. If the accounting principle previously followed was not acceptable or if the principle was applied incorrectly, a change to a generally accepted accounting principle is considered a correction of an error.

2 Describe the accounting for changes in estimates and changes in the reporting entity.

Companies report changes in estimates prospectively. That is, companies should make no changes in previously reported results. They do not adjust opening balances nor change financial statements of prior periods.

An accounting change that results in financial statements that are actually the statements of a different entity should be reported by restating the financial statements of all prior periods presented, to show the financial information for the new reporting entity for all periods.

3 Describe the accounting for correction of errors.

Companies must correct errors as soon as they discover them, by proper entries in the accounts, and report them in the financial statements. The profession requires that a company treat corrections of errors as prior period adjustments, record them in the year in which it discovered the errors, and report them in the financial statements in the proper periods. If presenting comparative statements, a company should restate the prior statements affected to correct for the errors. The company need not repeat the disclosures in the financial statements of subsequent periods.

4 Analyze the effects of errors.

Three types of errors can occur. (1) *Balance sheet errors*, which affect only the presentation of an asset, liability, or stockholders' equity account. (2) *Income statement errors*, which affect only the presentation of revenue, expense, gain, or loss accounts in the income statement. (3) *Balance sheet and income statement errors*, which involve both the balance sheet and income statement. Errors are classified into two types. (1) *Counterbalancing errors* are offset or corrected over two periods. (2) *Noncounterbalancing errors* are not offset in the next accounting period and take longer than two periods to correct themselves.

*5 Make the computations and prepare the entries necessary to record a change from or to the equity method of accounting.

When changing *from* the equity method to the fair value method, the cost basis for accounting purposes is the carrying amount used for the investment at the date of change. The investor company applies the new method in its entirety once the equity method is no longer appropriate. When changing *to* the equity method, companies use the prospective approach by adding the cost of acquiring the additional interest in the investee company to the cost basis of their previously held interest.

As an aid to understanding accounting changes, we provide the following glossary.

Key Terms Related to Accounting Changes

1. **Accounting change.** A change in (1) an accounting principle. (2) an accounting estimate, or (3) the reporting entity. The correction of an error in previously issued financial statements is not an accounting change.
2. **Change in accounting principle.** A change from one generally accepted accounting principle to another generally accepted accounting principle when two or more generally accepted accounting principles apply or when the accounting principle formerly used is no longer generally accepted.
3. **Change in accounting estimate.** A change that has the effect of adjusting the carrying amount of an existing asset or liability or altering the subsequent accounting for existing or future assets or liabilities. Changes in accounting estimates result from new information.
4. **Change in accounting estimate effected by a change in accounting principle.** A change in accounting estimate that is inseparable from the effect of a related change in accounting principle.

5. **Change in reporting entity.** A change that results in financial statements that in effect, are those of a different reporting entity.
6. **Direct effects of a change in accounting principle.** Those recognized changes in assets or liabilities necessary to effect a change in accounting principle.
7. **Error in previously issued financial statements.** An error in recognition, measurement, presentation, or disclosure in financial statements resulting from mathematical mistakes, mistakes in the application of GAAP, or oversight or misuse of facts that existed at the time the financial statements were prepared. A change from an accounting principle that is not generally accepted to one that is generally accepted is a correction of an error.
8. **Indirect effects of a change in accounting principle.** Any changes to current or future cash flows of an entity that result from making a change in accounting principle that is applied retrospectively.
9. **Restatement.** The process of revising previously issued financial statements to report the correction of an error in those financial statements.
10. **Retrospective application.** The application of a different accounting principle to one or more previously issued financial statements or to the statement of financial position at the beginning of the current period, as if that principle had always been used, or a change to financial statements of prior accounting periods to present the financial statements of a new reporting entity as if it had existed in those prior years. [12]

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. In recent years, the *Wall Street Journal* has indicated that many companies have changed their accounting principles. What are the major reasons why companies change accounting methods?

2. State how each of the following items is reported in the financial statements.
   - **a.** Change from FIFO to LIFO method for inventory valuation purposes.
   - **b.** Charge for failure to record depreciation in a previous period.
   - **c.** Litigation won in current year, related to prior period.
   - **d.** Change in the realizability of certain receivables.
   - **e.** Write-off of receivables.
   - **f.** Change from the percentage-of-completion to the cost-recovery method for reporting net income.

3. Discuss briefly the three approaches that have been suggested for reporting changes in accounting principles.

4. Identify and describe the approach the FASB requires for reporting changes in accounting principles.

5. What is the indirect effect of a change in accounting principle? Briefly describe the reporting of the indirect effects of a change in accounting principle.

6. Define a change in estimate and provide an illustration. When is a change in accounting estimate effected by a change in accounting principle?

7. Lenexa State Bank has followed the practice of capitalizing certain marketing costs and amortizing these costs over their expected life. In the current year, the bank determined that the future benefits from these costs were doubtful. Consequently, the bank adopted the policy of expensing these costs as incurred. How should the bank report this accounting change in the comparative financial statements?

8. Indicate how the following items are recorded in the accounting records in the current year of Coronet Co.
   - **a.** Impairment of goodwill.
   - **b.** A change in depreciating plant assets from accelerated to the straight-line method.
   - **c.** Large write-off of inventories because of obsolescence.
   - **d.** Change from the cash basis to accrual basis of accounting.
   - **e.** Change from LIFO to FIFO method for inventory valuation purposes.
   - **f.** Change in the estimate of service lives for plant assets.

9. Whittier Construction Co. had followed the practice of expensing all materials assigned to a construction job without recognizing any salvage inventory. On December 31, 2025, it was determined that salvage inventory should be valued at $52,000. Of this amount, $29,000 arose during the current year. How does this information affect the financial statements to be prepared at the end of 2025?

10. Parsons Inc. has proposed a change from one inventory accounting method to another for financial reporting purposes. The auditor indicates that a change would be permitted only if it is to a preferable method. What difficulties develop in assessing preferability?

11. Discuss how a change to the LIFO method of inventory valuation is handled when it is impracticable to determine previous LIFO inventory amounts.

12. How should consolidated financial statements be reported this year when statements of individual companies were presented last year?

13. Simms Corp. controlled four domestic subsidiaries and one foreign subsidiary. Prior to the current year, Simms Corp. had excluded the foreign subsidiary from consolidation. During the current year, the foreign subsidiary was included in the financial statements. How should this change in accounting entity be reported in the financial statements?

14. Distinguish between counterbalancing and noncounterbalancing errors. Give an example of each.

15. Discuss and illustrate how a correction of an error in previously issued financial statements should be handled.

16. Prior to 2025, Heberling Inc. excluded manufacturing overhead costs from work in process and finished goods inventory. These costs have been expensed as incurred. In 2025, the company decided to change its accounting methods for manufacturing inventories to full costing by including these costs as product costs. Assuming that these costs are material, how should this change be reported in the financial statements for 2024 and 2025?

17. Elliott Corp. failed to record accrued salaries for 2024, $2,000; 2025, $2,100; and 2026, $3,900. What is the amount of the overstatement or understatement of Retained Earnings at December 31, 2027?

18. In January 2025, installation costs of $6,000 on new machinery were charged to Maintenance and Repairs Expense. Other costs of this machinery of $30,000 were correctly recorded and have been depreciated using the straight-line method with an estimated life of 10 years and no salvage value. At December 31, 2026, it is decided that the machinery has a remaining useful life of 20 years, starting with January 1, 2026. What entry(entries) should be made in 2026 to correctly record transactions related to machinery, assuming the machinery has no salvage value? The books have not been closed for 2026 and depreciation expense has not yet been recorded for 2026.

19. On January 2, 2025, $100,000 of 11%, 10-year bonds were issued for $97,000. The $3,000 discount was charged to Interest Expense. The bookkeeper, Mark Landis, records interest only on the interest payment dates of June 30 and December 31. What is the effect on reported net income for 2025 of this error, assuming straight-line amortization of the discount? What entry is necessary to correct for this error, assuming that the books are not closed for 2025?

20. An entry to record Purchases and related Accounts Payable of $13,000 for merchandise purchased on December 23, 2026, was recorded in January 2027. This merchandise was not included in inventory at December 31, 2026. What effect does this error have on reported net income for 2026? What entry should be made to correct for this error, assuming that the books are not closed for 2026?

21. Equipment was purchased on January 2, 2025, for $24,000, but no portion of the cost has been charged to depreciation. The corporation wishes to use the straight-line method for these assets, which have been estimated to have a life of 10 years and no salvage value. What effect does this error have on net income in 2025? What entry is necessary to correct for this error, assuming that the books are not closed for 2025?

Brief Exercises

BE21.1 (LO 1) At the beginning of 2025, Wertz Construction Company changed from the cost-recovery method to recognizing revenue over time (percentage-of-completion) for financial reporting purposes. The company will continue to use the cost-recovery method for tax purposes. For years prior to 2025, pretax income under the two methods was as follows: percentage-of-completion $120,000, and cost-recovery $80,000. The tax rate is 20%. Prepare Wertz's 2025 journal entry to record the change in accounting principle.

BE21.2 (LO 1) Refer to the accounting change by Wertz Construction Company in BE21.1. Wertz has a profit-sharing plan, which pays all employees a bonus at year-end based on 1% of pretax income. Compute the indirect effect of Wertz's change in accounting principle that will be reported in the 2025 income statement, assuming that the profit-sharing contract explicitly requires adjustment for changes in income numbers.

BE21.3 (LO 1) Shannon, Inc., changed from the LIFO cost flow assumption to the FIFO cost flow assumption in 2025. The increase in the prior year's income before taxes is $1,200,000. The tax rate is 20%. Prepare Shannon's 2025 journal entry to record the change in accounting principle.

BE21.4 (LO 2) Tedesco Company changed depreciation methods in 2025 from double-declining-balance to straight-line. Depreciation prior to 2025 under double-declining-balance was $90,000, whereas straight-line depreciation prior to 2025 would have been $50,000. Tedesco's depreciable assets had a cost of $250,000 with a $40,000 salvage value, and an 8-year remaining useful life at the beginning of 2025. Prepare the 2025 journal entries, if any, related to Tedesco's depreciable assets.

BE21.5 (LO 2) Sesame Company purchased a computer system for $74,000 on January 1, 2024. It was depreciated based on a 7-year life and an $18,000 salvage value. On January 1, 2026, Sesame revised these estimates to a total useful life of 4 years and a salvage value of $10,000. Prepare Sesame's entry to record 2026 depreciation expense. Sesame uses straight-line depreciation.

BE21.6 (LO 3) In 2025, Bailey Corporation discovered that equipment purchased on January 1, 2023, for $50,000 was expensed at that time. The equipment should have been depreciated over 5 years, with no salvage value. The effective tax rate is 30%. Prepare Bailey's 2025 journal entry to correct the error. Bailey uses straight-line depreciation.

BE21.7 (LO 3) At January 1, 2025, Beidler Company reported retained earnings of $2,000,000. In 2025, Beidler discovered that 2024 depreciation expense was understated by $400,000. In 2025, net income was $900,000 and dividends declared were $250,000. The tax rate is 20%. Prepare a 2025 retained earnings statement for Beidler Company.

BE21.8 (LO 3) Indicate the effect—Understate, Overstate, No Effect—that each of the following errors has on 2025 net income and 2026 net income.

	2025	2026
a. Equipment (with a useful life of 5 years) was purchased and expensed in 2023.	_____	_____
b. Wages payable were not recorded at 12/31/25.	_____	_____
c. Equipment purchased in 2025 was expensed.	_____	_____
d. 2025 ending inventory was overstated.	_____	_____
e. Patent amortization was not recorded in 2026.	_____	_____

BE21.9 (LO 1, 2) Roundtree Manufacturing Co. is preparing its year-end financial statements and is considering the accounting for the following items.

1. The vice president of sales had indicated that one product line has lost its customer appeal and will be phased out over the next 3 years. Therefore, a decision has been made to lower the estimated lives on related production equipment from the remaining 5 years to 3 years.
2. The Hightone Building was converted from a sales office to offices for the Accounting Department at the beginning of this year. Therefore, the expense related to this building will now appear as an administrative expense rather than a selling expense on the current year's income statement.
3. Estimating the lives of new products in the Leisure Products Division has become very difficult because of the highly competitive conditions in this market. Therefore, the practice of deferring and amortizing preproduction costs has been abandoned in favor of expensing such costs as they are incurred.

Identify and explain whether each of the above items is a change in principle, a change in estimate, or an error.

BE21.10 (LO 1, 3) Palmer Co. is evaluating the appropriate accounting for the following items.

1. Management has decided to switch from the FIFO inventory valuation method to the LIFO inventory valuation method for all inventories.
2. When the year-end physical inventory adjustment was made for the current year, the controller discovered that the prior year's physical inventory sheets for an entire warehouse were mislaid and excluded from last year's count.
3. Palmer's Custom Division manufactures large-scale, custom-designed machinery on a contract basis. Management decided to switch from the cost-recovery method to the percentage-of-completion method of accounting for long-term contracts.

Identify and explain whether each of the above items is a change in accounting principle, a change in estimate, or an error.

*__BE21.11 (LO 5)__ Simmons Corporation owns stock of Armstrong, Inc. Prior to 2025, the investment was accounted for using the equity method. In early 2025, Simmons sold part of its investment in Armstrong, and began using the fair value method. In 2025, Armstrong earned net income of $80,000 and paid dividends of $95,000. Prepare Simmons's entries related to Armstrong's net income and dividends, assuming Simmons now owns 10% of Armstrong's stock.

*__BE21.12 (LO 5)__ Oliver Corporation has owned stock of Conrad Corporation since 2022. At December 31, 2025, its balances related to this investment were:

Equity Investments	$185,000
Fair Value Adjustment	34,000 Dr.

On January 1, 2026, Oliver purchased additional stock of Conrad Company for $475,000 and now has significant influence over Conrad. Prepare Oliver's journal entries to record the purchase of the investment and the change to the equity method.

Exercises

E21.1 (LO 1) (Change in Principle—Long-Term Contracts) Pam Erickson Construction Company changed from the cost-recovery to the percentage-of-completion method of accounting for long-term construction contracts during 2026. For tax purposes, the company employs the cost-recovery

method and will continue this approach in the future. (*Hint:* Adjust all tax consequences through the Deferred Tax Liability account.) The appropriate information related to this change is as follows.

	Pretax Income from		
	Percentage-of-Completion	Cost-Recovery	Difference
2025	$780,000	$590,000	$190,000
2026	700,000	480,000	220,000

Instructions

a. Assuming that the tax rate is 20%, what is the amount of net income that would be reported in 2026?

b. What entry(entries) are necessary to adjust the accounting records for the change in accounting principle?

E21.2 (LO 1) (Change in Principle—Inventory Methods) Holder-Webb Company began operations on January 1, 2023, and uses the average-cost method of pricing inventory. Management is contemplating a change in inventory methods for 2026. The following information is available for the years 2023–2025.

	Net Income Computed Using		
	Average-Cost Method	FIFO Method	LIFO Method
2023	$15,000	$19,000	$12,000
2024	18,000	23,000	14,000
2025	20,000	25,000	17,000

Instructions

(Ignore all tax effects.)

a. Prepare the journal entry necessary to record a change from the average-cost method to the FIFO method in 2026.

b. Determine net income to be reported for 2023, 2024, and 2025, after giving effect to the change in accounting principle.

c. Assume Holder-Webb Company used the LIFO method instead of the average-cost method during the years 2023–2025. In 2026, Holder-Webb changed to the FIFO method. Prepare the journal entry necessary to record the change in principle.

E21.3 (LO 1) (Accounting Change) Taveras Co. decides at the beginning of 2025 to adopt the FIFO method of inventory valuation. Taveras had used the LIFO method for financial reporting since its inception on January 1, 2023, and had maintained records adequate to apply the FIFO method retrospectively. Taveras concluded that FIFO is the preferable inventory method because it reports the current cost of inventory on the balance sheet. The following table presents the effects of the change in accounting principles on inventory and cost of goods sold.

	Inventory Determined by		Cost of Goods Sold Determined by	
Date	LIFO Method	FIFO Method	LIFO Method	FIFO Method
January 1, 2023	$ 0	$ 0	$ 0	$ 0
December 31, 2023	100	80	800	820
December 31, 2024	200	240	1,000	940
December 31, 2025	320	390	1,130	1,100

Other information:

1. For each year presented, sales are $3,000 and operating expenses are $1,000.
2. Taveras provides two years of financial statements. Earnings per share information is not required.

Instructions

a. Prepare income statements under LIFO and FIFO for 2023, 2024, and 2025.

b. Prepare income statements reporting the retrospective application of the accounting change from the LIFO method to the FIFO method for 2025 and 2024.

c. Prepare the note to the financial statements describing the change in method of inventory valuation. In the note, indicate the income statement line items for 2025 and 2024 that were affected by the change in accounting principle.

d. Prepare comparative retained earnings statements for 2024 and 2025 under FIFO. Retained earnings reported under LIFO are as follows:

	Retained Earnings Balance
December 31, 2023	$1,200
December 31, 2024	2,200
December 31, 2025	3,070

E21.4 (LO 1) (Accounting Change) Gordon Company started operations on January 1, 2020, and has used the FIFO method of inventory valuation since its inception. In 2026, it decides to switch to the average-cost method. You are provided with the following information.

	Net Income		Retained Earnings (Ending Balance)
	Under FIFO	Under Average-Cost	Under FIFO
2020	$100,000	$ 90,000	$100,000
2021	70,000	65,000	160,000
2022	90,000	80,000	235,000
2023	120,000	130,000	340,000
2024	300,000	290,000	590,000
2025	305,000	310,000	780,000

Instructions

a. What is the beginning retained earnings balance at January 1, 2022, if Gordon prepares comparative financial statements starting in 2022?

b. What is the beginning retained earnings balance at January 1, 2025, if Gordon prepares comparative financial statements starting in 2025?

c. What is the beginning retained earnings balance at January 1, 2026, if Gordon prepares single-period financial statements for 2026?

d. What is the net income reported by Gordon in the 2025 income statement if it prepares comparative financial statements starting with 2023?

E21.5 (LO 1) (Accounting Change) Presented below are income statements prepared on a LIFO and FIFO basis for Kenseth Company, which started operations on January 1, 2024. The company presently uses the LIFO method of pricing its inventory and has decided to switch to the FIFO method in 2025. The FIFO income statement is computed in accordance with the requirements of GAAP. Kenseth's profit-sharing agreement with its employees indicates that the company will pay employees 10% of income before profit-sharing. Income taxes are ignored.

	LIFO Basis		FIFO Basis	
	2025	2024	2025	2024
Sales revenue	$3,000	$3,000	$3,000	$3,000
Cost of goods sold	1,130	1,000	1,100	940
Operating expenses	1,000	1,000	1,000	1,000
Income before profit-sharing	870	1,000	900	1,060
Profit-sharing expense	87	100	96	100
Net income	$ 783	$ 900	$ 804	$ 960

Instructions

Answer the following questions.

a. If comparative income statements are prepared, what net income should Kenseth report in 2024 and 2025?

b. Explain why, under the FIFO basis, Kenseth reports $100 in 2024 and $96 in 2025 for its profit-sharing expense.

c. Assume that Kenseth has a beginning balance of retained earnings at January 1, 2025, of $900 using the LIFO method. The company declared and paid dividends of $500 in 2025. Prepare the retained earnings statement for 2025, assuming that Kenseth has switched to the FIFO method.

E21.6 (LO 1) (Change in Principle—Long-Term Contracts) Cullen Construction Company, which began operations in 2025, changed from the cost-recovery to the percentage-of-completion method of accounting for long-term construction contracts during 2026. For tax purposes, the company employs

the cost-recovery method and will continue this approach in the future. The appropriate information related to this change is as follows.

	Pretax Income from		
	Percentage-of-Completion	Cost-Recovery	Difference
2025	$880,000	$590,000	$290,000
2026	900,000	480,000	420,000

Instructions

a. Assuming that the tax rate is 20%, what is the amount of net income that would be reported in 2026?

b. What entry(entries) are necessary to adjust the accounting records for the change in accounting principle?

E21.7 (LO 1) (Various Changes in Principle—Inventory Methods) Below is the net income of Anita Ferreri Instrument Co., a private corporation, computed under the three inventory methods using a periodic system.

	FIFO	Average-Cost	LIFO
2023	$26,000	$24,000	$20,000
2024	30,000	25,000	21,000
2025	28,000	27,000	24,000
2026	34,000	30,000	26,000

Instructions

(Ignore tax considerations.)

a. Assume that in 2026 Ferreri decided to change from the FIFO method to the average-cost method of pricing inventories. Prepare the journal entry necessary for the change that took place during 2026, and show net income reported for 2023, 2024, 2025, and 2026.

b. Assume that in 2026 Ferreri, which had been using the LIFO method since incorporation in 2023, changed to the FIFO method of pricing inventories. Prepare the journal entry necessary to record the change in 2026 and show net income reported for 2023, 2024, 2025, and 2026.

E21.8 (LO 2) (Accounting Changes—Depreciation) Kathleen Cole Inc. acquired the following assets in January of 2023.

Equipment, estimated useful life, 5 years; salvage value, $15,000	$525,000
Building, estimated useful life, 30 years; no salvage value	$693,000

The equipment has been depreciated using the sum-of-the-years'-digits method for the first 3 years for financial reporting purposes. In 2026, the company decided to change the method of computing depreciation to the straight-line method for the equipment, but no change was made in the estimated useful life or salvage value. It was also decided to change the total estimated useful life of the building from 30 years to 40 years, with no change in the estimated salvage value. The building is depreciated on the straight-line method.

Instructions

a. Prepare the general journal entry to record depreciation expense for the equipment in 2026.

b. Prepare the journal entry to record depreciation expense for the building in 2026. (Round all computations to two decimal places.)

E21.9 (LO 2, 3) (Change in Estimate and Error; Financial Statements) Presented below are the comparative income and retained earnings statements for Denise Habbe Inc. for the years 2025 and 2026.

	2026	2025
Sales	$340,000	$270,000
Cost of sales	200,000	142,000
Gross profit	140,000	128,000
Expenses	88,000	50,000
Net income	$ 52,000	$ 78,000
Retained earnings (Jan. 1)	$125,000	$ 72,000
Net income	52,000	78,000
Dividends	(30,000)	(25,000)
Retained earnings (Dec. 31)	$147,000	$125,000

The following additional information is provided:

1. In 2026, Denise Habbe Inc. decided to switch its depreciation method from sum-of-the-years' digits to the straight-line method. The assets were purchased at the beginning of 2025 for $100,000 with an estimated useful life of 4 years and no salvage value. (The 2026 income statement contains depreciation expense of $30,000 on the assets purchased at the beginning of 2025.)
2. In 2026, the company discovered that the ending inventory for 2025 was overstated by $24,000; ending inventory for 2026 is correctly stated.

Instructions

Prepare the revised retained earnings statement for 2025 and 2026, assuming comparative statements. (Ignore income taxes.)

E21.10 (LO 1, 2, 3) (Accounting for Accounting Changes and Errors) Listed below are various types of accounting changes and errors.

_____ **1.** Change in a plant asset's salvage value.
_____ **2.** Change due to overstatement of inventory.
_____ **3.** Change from sum-of-the-years'-digits to straight-line method of depreciation.
_____ **4.** Change from presenting unconsolidated to consolidated financial statements.
_____ **5.** Change from LIFO to FIFO inventory method.
_____ **6.** Change in the rate used to compute warranty costs.
_____ **7.** Change from an unacceptable accounting principle to an acceptable accounting principle.
_____ **8.** Change in a patent's amortization period.
_____ **9.** Change from cost-recovery to percentage-of-completion method on construction contracts.
_____ **10.** Change from FIFO to average-cost inventory method.

Instructions

For each change or error, indicate how it would be accounted for using the following code letters:

a. Accounted for prospectively.
b. Accounted for retrospectively.
c. Neither of the above.

E21.11 (LO 2, 3) Excel (Error and Change in Estimate—Depreciation) Joy Cunningham Co. purchased a machine on January 1, 2023, for $550,000. At that time, it was estimated that the machine would have a 10-year life and no salvage value. On December 31, 2026, the firm's accountant found that the entry for depreciation expense had been omitted in 2024. In addition, management has informed the accountant that the company plans to switch to straight-line depreciation, starting with the year 2026. At present, the company uses the sum-of-the-years'-digits method for depreciating equipment.

Instructions

Prepare the general journal entries that should be made at December 31, 2026, to record these events. (Ignore tax effects.)

E21.12 (LO 2) (Depreciation Changes) On January 1, 2022, Jackson Company purchased a building and equipment that have the following useful lives, salvage values, and costs.

Building, 40-year estimated useful life, $50,000 salvage value, $800,000 cost
Equipment, 12-year estimated useful life, $10,000 salvage value, $100,000 cost

The building has been depreciated under the double-declining-balance method through 2025. In 2026, the company decided to switch to the straight-line method of depreciation. Jackson also decided to change the total useful life of the equipment to 9 years, with a salvage value of $5,000 at the end of that time. The equipment is depreciated using the straight-line method.

Instructions

a. Prepare the journal entry(entries) necessary to record the depreciation expense on the building in 2026.
b. Compute depreciation expense on the equipment for 2026.

E21.13 (LO 2) Excel (Change in Estimate—Depreciation) Peter M. Dell Co. purchased equipment for $510,000 which was estimated to have a useful life of 10 years with a salvage value of $10,000 at the end

of that time. Depreciation has been entered for 7 years on a straight-line basis. In 2026, it is determined that the total estimated life should be 15 years with a salvage value of $5,000 at the end of that time.

Instructions

a. Prepare the entry (if any) to correct the prior years' depreciation.

b. Prepare the entry to record depreciation for 2026.

E21.14 (LO 2) (Change in Estimate—Depreciation) Gerald Englehart Industries changed from the double-declining-balance to the straight-line method in 2026 on all its equipment. There was no change in the assets' salvage values or useful lives. Plant assets, acquired on January 2, 2023, had an original cost of $1,600,000, with a $100,000 salvage value and an 8-year estimated useful life. Income before depreciation expense was $270,000 in 2025 and $300,000 in 2026.

Instructions

a. Prepare the journal entry(entries) to record depreciation expense in 2026.

b. Starting with income before depreciation expense, prepare the remaining portion of the income statement for 2025 and 2026.

E21.15 (LO 3) (Error Correction Entries) The first audit of the books of Bruce Gingrich Company was made for the year ended December 31, 2026. In examining the books, the auditor found that certain items had been overlooked or incorrectly handled in the last 3 years. These items are:

1. At the beginning of 2024, the company purchased a machine for $510,000 (salvage value of $51,000) that had a useful life of 6 years. The bookkeeper used straight-line depreciation but failed to deduct the salvage value in computing the depreciation base for the 3 years.
2. At the end of 2025, the company failed to accrue sales salaries of $45,000.
3. A tax lawsuit that involved the year 2024 was settled late in 2026. It was determined that the company owed an additional $85,000 in taxes related to 2024. The company did not record a liability in 2024 or 2025 because the possibility of loss was considered remote, and charged the $85,000 to a loss account in 2026.
4. Gingrich Company purchased a copyright from another company early in 2024 for $45,000. Gingrich had not amortized the copyright because its value had not diminished. The copyright has a useful life at purchase of 20 years.
5. In 2026, the company wrote off $87,000 of inventory considered to be obsolete; this loss was charged directly to Retained Earnings.

Instructions

Prepare the journal entries necessary in 2026 to correct the books, assuming that the books have not been closed. Disregard effects of corrections on income tax.

E21.16 (LO 3) (Error Analysis and Correcting Entry) You have been engaged to review the financial statements of Gottschalk Corporation. In the course of your examination, you conclude that the bookkeeper hired during the current year is not doing a good job. You notice a number of irregularities as follows.

1. Year-end wages payable of $3,400 were not recorded because the bookkeeper thought that "they were immaterial."
2. Accrued vacation pay for the year of $31,100 was not recorded because the bookkeeper "never heard that you had to do it."
3. Insurance for a 12-month period purchased on November 1 of this year was charged to insurance expense in the amount of $2,640 because "the amount of the check is about the same every year."
4. Reported sales revenue for the year is $2,120,000. This includes all sales taxes collected for the year. The sales tax rate is 6%. Because the sales tax is forwarded to the state's Department of Revenue, the Sales Tax Expense account is debited. The bookkeeper thought that "the sales tax is a selling expense." At the end of the current year, the balance in the Sales Tax Expense account is $103,400.

Instructions

Prepare the necessary correcting entries, assuming that Gottschalk uses a calendar-year basis.

E21.17 (LO 3) (Error Analysis and Correcting Entry) The reported net incomes for the first 2 years of Sandra Gustafson Products, Inc., were as follows: 2025, $147,000; 2026, $185,000. Early in 2027, the following errors were discovered.

1. Depreciation of equipment for 2025 was overstated $17,000.
2. Depreciation of equipment for 2026 was understated $38,500.
3. December 31, 2025, inventory was understated $50,000.
4. December 31, 2026, inventory was overstated $16,200.

Instructions

Prepare the correcting entry necessary when these errors are discovered. Assume that the books are closed. (Ignore income tax considerations.)

E21.18 (LO 3, 4) (Error Analysis) Peter Henning Tool Company's December 31 year-end financial statements contained the following errors.

	December 31, 2025	December 31, 2026
Ending inventory	$9,600 understated	$8,100 overstated
Depreciation expense	2,300 understated	—

An insurance premium of $66,000 was prepaid in 2025 covering the years 2025, 2026, and 2027. The entire amount was charged to expense in 2025. In addition, on December 31, 2026, fully depreciated machinery was sold for $15,000 cash, but the entry was not recorded until 2027. There were no other errors during 2025 or 2026, and no corrections have been made for any of the errors. (Ignore income tax considerations.)

Instructions

a. Compute the total effect of the errors on 2026 net income.

b. Compute the total effect of the errors on the amount of Henning's working capital at December 31, 2026.

c. Compute the total effect of the errors on the balance of Henning's retained earnings at December 31, 2026.

E21.19 (LO 3, 4) (Error Analysis; Correcting Entries) A partial trial balance of Julie Hartsack Corporation is as follows on December 31, 2026.

	Dr.	Cr.
Supplies	$ 2,700	
Salaries and wages payable		$ 1,500
Interest receivable	5,100	
Prepaid insurance	90,000	
Unearned rent revenue		–0–
Interest payable		15,000

Additional adjusting data:

1. A physical count of supplies on hand on December 31, 2026, totaled $1,100.
2. Through oversight, the Salaries and Wages Payable account was not changed during 2026. Accrued salaries and wages on December 31, 2026, amounted to $4,400.
3. The Interest Receivable account was also left unchanged during 2026. Accrued interest on investments amounts to $4,350 on December 31, 2026.
4. The unexpired portions of the insurance policies totaled $65,000 as of December 31, 2026.
5. $28,000 was received on January 1, 2026, for the rent of a building for both 2026 and 2027. The entire amount was credited to Rent Revenue.
6. Depreciation on equipment for the year was erroneously recorded as $5,000 rather than the correct figure of $50,000.
7. A further review of depreciation calculations of prior years revealed that equipment depreciation of $7,200 was not recorded. It was decided that this oversight should be corrected by a prior period adjustment.

Instructions

a. Assuming that the books have not been closed, what are the adjusting entries necessary at December 31, 2026? (Ignore income tax considerations.)

b. Assuming that the books have been closed, what are the adjusting entries necessary at December 31, 2026? (Ignore income tax considerations.)

c. Repeat the requirements for items 6 and 7, taking into account income tax effects (40% tax rate) and assuming that the books have been closed.

E21.20 (LO 3, 4) (Error Analysis) The before-tax income for Lonnie Holdiman Co. for 2025 was $101,000 and $77,400 for 2026. However, the accountant noted that the following errors had been made:

1. Sales for 2025 included amounts of $38,200 which had been received in cash during 2025, but for which the related products were delivered in 2026. Title did not pass to the purchaser until 2026.
2. The inventory on December 31, 2025, was understated by $8,640.

3. The bookkeeper in recording interest expense for both 2025 and 2026 on bonds payable made the following entry on an annual basis.

Interest Expense	15,000	
Cash		15,000

The bonds have a face value of $250,000 and pay a stated interest rate of 6%. They were issued at a discount of $15,000 on January 1, 2025, to yield an effective-interest rate of 7%. (Assume that the effective-interest method should be used.)

4. Ordinary repairs to equipment had been erroneously charged to the Equipment account during 2025 and 2026. Repairs in the amount of $8,500 in 2025 and $9,400 in 2026 were so charged. The company applies a rate of 10% to the balance in the Equipment account at the end of the year in its determination of depreciation charges.

Instructions

Prepare a schedule showing the determination of corrected income before taxes for 2025 and 2026.

E21.21 (LO 3, 4) (Error Analysis) When the records of Debra Hanson Corporation were reviewed at the close of 2026, the following errors were discovered. For each item, indicate by a check mark in the appropriate column whether the error resulted in an overstatement, an understatement, or had no effect on net income for the years 2025 and 2026.

	2025			2026		
Item	**Overstatement**	**Understatement**	**No Effect**	**Overstatement**	**Understatement**	**No Effect**
1. Failure to record amortization of patent in 2026.						
2. Failure to record the correct amount of ending 2025 inventory. The amount was understated because of an error in calculation.						
3. Failure to record merchandise purchased in 2025. Merchandise was also omitted from ending inventory in 2025 but was not yet sold.						
4. Failure to record accrued interest on notes payable in 2025; that amount was recorded when paid in 2026.						
5. Failure to record supplies on hand on balance sheet at end of 2025.						

*E21.22 (LO 5) **(Change from Fair Value to Equity)** On January 1, 2025, Beyonce Co. purchased 25,000 shares (a 10% interest) in Elton John Corp. for $1,400,000. At the time, the book value and the fair value of John's net assets were $13,000,000.

On July 1, 2026, Beyonce paid $3,040,000 for 50,000 additional shares of John common stock, which represented a 20% investment in John. As a result of this transaction, Beyonce owns 30% of John and can exercise significant influence over John's operating and financial policies.

John reported the following net income and declared and paid the following dividends.

	Net Income	Dividend per Share
Year ended 12/31/25	$700,000	None
Six months ended 6/30/26	500,000	None
Six months ended 12/31/26	815,000	$1.55

Instructions

Determine the ending balance that Beyonce Co. should report as its investment in John Corp. at the end of 2026.

*E21.23 (LO 5) **(Change from Equity to Fair Value)** Aykroyd Corp. was a 30% owner of Martin Company, holding 210,000 shares of Martin's common stock on December 31, 2024. The investment account had the following entries.

Investment in Martin			
1/1/23 Cost	$3,180,000	12/6/23 Dividend received	$150,000
12/31/23 Share of income	390,000	12/5/24 Dividend received	240,000
12/31/24 Share of income	510,000		

On January 2, 2025, Aykroyd sold 126,000 shares of Martin for $3,440,000, thereby losing its significant influence. During the year 2025, Martin experienced the following results of operations and paid the following dividends to Aykroyd.

	Martin Income (Loss)	Dividends Paid to Aykroyd
2025	$300,000	$50,400

At December 31, 2025, the fair value of Martin shares held by Aykroyd is $1,570,000. This is the first reporting date since the January 2 sale.

Instructions

a. What effect does the January 2, 2025, transaction have upon Aykroyd's accounting treatment for its investment in Martin?

b. Compute the carrying amount of the investment in Martin as of December 31, 2025 (prior to any fair value adjustment).

c. Prepare the adjusting entry on December 31, 2025, applying the fair value method to Aykroyd's long-term investment in Martin Company securities.

Problems

P21.1 (LO 1) **(Change in Principle—Inventory—Periodic)** The management of Utrillo Instrument Company had concluded, with the concurrence of its independent auditors, that results of operations would be more fairly presented if Utrillo changed its method of pricing inventory from last-in, first-out (LIFO) to average-cost in 2025. Given below is the 5-year summary of income under LIFO and a schedule of what the inventories would be if stated on the average-cost method.

Utrillo Instrument Company
Statement of Income and Retained Earnings
For the Years Ended May 31

	2021	2022	2023	2024	2025
Sales revenue—net	$13,964	$15,506	$16,673	$18,221	$18,898
Cost of goods sold					
Beginning inventory	1,000	1,100	1,000	1,115	1,237
Purchases	13,000	13,900	15,000	15,900	17,100
Ending inventory	(1,100)	(1,000)	(1,115)	(1,237)	(1,369)
Total	12,900	14,000	14,885	15,778	16,968
Gross profit	1,064	1,506	1,788	2,443	1,930
Administrative expenses	700	763	832	907	989
Income before taxes	364	743	956	1,536	941
Income taxes (50%)	182	372	478	768	471
Net income	182	371	478	768	470
Retained earnings—beginning	1,206	1,388	1,759	2,237	3,005
Retained earnings—ending	$ 1,388	$ 1,759	$ 2,237	$ 3,005	$ 3,475
Earnings per share	$ 1.82	$ 3.71	$ 4.78	$ 7.68	$ 4.70

Schedule of Inventory Balances Using Average-Cost Method
For the Years Ended May 31

2020	2021	2022	2023	2024	2025
$1,010	$ 1,124	$ 1,101	$ 1,270	$ 1,500	$ 1,720

Instructions

Prepare comparative statements for the 5 years, assuming that Utrillo changed its method of inventory pricing to average-cost. Indicate the effects on net income and earnings per share for the years involved. Utrillo Instruments started business in 2020. (All amounts except EPS are rounded up to the nearest dollar.)

P21.2 (LO 1, 2, 3) Excel Groupwork **(Change in Estimate and Error Correction)** Holtzman Company is in the process of preparing its financial statements for 2025. Assume that no entries for depreciation have been recorded in 2025. The following information related to depreciation of fixed assets is provided to you.

1. Holtzman purchased equipment on January 2, 2022, for $85,000. At that time, the equipment had an estimated useful life of 10 years with a $5,000 salvage value. The equipment is depreciated on a straight-line basis. On January 2, 2025, as a result of additional information, the company determined that the equipment has a remaining useful life of 4 years with a $3,000 salvage value.
2. During 2025, Holtzman changed from the double-declining-balance method for its building to the straight-line method. The building originally cost $300,000. It had a useful life of 10 years and a salvage value of $30,000. The following computations present depreciation on both bases for 2023 and 2024.

	2024	2023
Straight-line	$27,000	$27,000
Declining-balance	48,000	60,000

3. Holtzman purchased a machine on July 1, 2023, at a cost of $120,000. The machine has a salvage value of $16,000 and a useful life of 8 years. Holtzman's bookkeeper recorded straight-line depreciation in 2023 and 2024 but failed to consider the salvage value.

Instructions

a. Prepare the journal entries to record depreciation expense for 2025 and correct any errors made to date related to the information provided. (Ignore taxes.)

b. Show comparative net income for 2024 and 2025. Income before depreciation expense was $300,000 in 2025, and was $310,000 in 2024. (Ignore taxes.)

P21.3 (LO 1, 2, 3, 4) **(Comprehensive Accounting Change and Error Analysis Problem)** Botticelli Inc. was organized in late 2023 to manufacture and sell hosiery. At the end of its fourth year of operation, the company has been fairly successful, as indicated by the following reported net incomes.

2023	$140,000[a]	2025	$205,000
2024	160,000[b]	2026	276,000

[a]Includes a $10,000 increase because of change in bad debt experience rate.
[b]Includes a gain of $30,000.

The company has decided to expand operations and has applied for a sizable bank loan. The bank officer has indicated that the records should be audited and presented in comparative statements to facilitate analysis by the bank. Botticelli Inc. therefore hired the auditing firm of Check & Doublecheck Co. and has provided the following additional information.

1. In early 2024, Botticelli Inc. changed its estimate from 2% of receivables to 1% on the amount of bad debt expense to be charged to operations. Bad debt expense for 2023, if a 1% rate had been used, would have been $10,000. The company therefore restated its net income for 2023.
2. In 2026, the auditor discovered that the company had changed its method of inventory pricing from LIFO to FIFO. The effect on the income statements for the previous years is as follows.

	2023	2024	2025	2026
Net income unadjusted—LIFO basis	$140,000	$160,000	$205,000	$276,000
Net income unadjusted—FIFO basis	155,000	165,000	215,000	260,000
	$ 15,000	$ 5,000	$ 10,000	$(16,000)

3. In 2026, the auditor discovered that:
   a. The company incorrectly overstated the ending inventory (under both LIFO and FIFO) by $14,000 in 2025.
   b. A dispute developed in 2024 with the Internal Revenue Service over the deductibility of entertainment expenses. In 2023, the company was not permitted these deductions, but a tax settlement was reached in 2026 that allowed these expenses. As a result of the court's finding, tax expenses in 2026 were reduced by $60,000.

Instructions

a. Indicate how each of these changes or corrections should be handled in the accounting records. (Ignore income tax considerations.)

b. Present net income as reported in comparative income statements for the years 2023 to 2026.

P21.4 (LO 1, 2, 3) (Error Corrections and Accounting Changes) Penn Company is in the process of adjusting and correcting its books at the end of 2025. In reviewing its records, the following information is compiled.

1. Penn has failed to accrue sales commissions payable at the end of each of the last 2 years, as follows.

December 31, 2024	$3,500
December 31, 2025	2,500

2. In reviewing the December 31, 2025, inventory, Penn discovered errors in its inventory-taking procedures that have caused inventories for the last 3 years to be incorrect, as follows.

December 31, 2023	Understated	$16,000
December 31, 2024	Understated	19,000
December 31, 2025	Overstated	6,700

Penn has already made an entry that established the incorrect December 31, 2025, inventory amount.

3. At December 31, 2025, Penn decided to change the depreciation method on its office equipment from double-declining-balance to straight-line. The equipment had an original cost of $100,000 when purchased on January 1, 2023. It has a 10-year useful life and no salvage value. Depreciation expense recorded prior to 2025 under the double-declining-balance method was $36,000. Penn has already recorded 2025 depreciation expense of $12,800 using the double-declining-balance method.

4. Before 2025, Penn accounted for its income from long-term construction contracts on the cost-recovery basis. Early in 2025, Penn changed to the percentage-of-completion basis for accounting purposes. It continues to use the cost-recovery method for tax purposes. Income for 2025 has been recorded using the percentage-of-completion method. The following information is available.

	Pretax Income	
	Percentage-of-Completion	**Cost-Recovery**
Prior to 2025	$150,000	$105,000
2025	60,000	20,000

Instructions

Prepare the journal entries necessary at December 31, 2025, to record the above corrections and changes. The books are still open for 2025. The income tax rate is 20%. Penn has not yet recorded its 2025 income tax expense and payable amounts so current-year tax effects may be ignored. Prior-year tax effects must be considered in item 4.

P21.5 (LO 1, 2) Groupwork Ethics (Accounting Changes) Aston Corporation performs year-end planning in November of each year before its calendar year ends in December. The preliminary estimated net income is $4,800,000. The CFO, Rita Warren, meets with the company president, J. B. Aston, to review the projected numbers. She presents the following projected information.

Aston Corporation
Projected Income Statement
For the Year Ended December 31, 2025

Sales revenue		$28,995,000
Interest revenue		5,000
Cost of goods sold	$14,000,000	
Depreciation	2,600,000	
Operating expenses	6,400,000	23,000,000
Income before income tax		6,000,000
Income tax		1,200,000
Net income		$ 4,800,000

Aston Corporation
Selected Balance Sheet Information
At December 31, 2025

Estimated cash balance	$ 5,000,000
Available-for-sale debt investments (at cost)	10,000,000
Fair value adjustment (1/1/25)	—0—

Estimated fair value at December 31, 2025:

Security	Cost	Estimated Fair Value
A	$ 2,000,000	$ 2,200,000
B	4,000,000	3,900,000
C	3,000,000	3,100,000
D	1,000,000	1,800,000
Total	$10,000,000	$11,000,000

Other information at December 31, 2025:

Equipment	$3,000,000
Accumulated depreciation (5-year SL)	1,200,000
New robotic equipment (purchased 1/1/25)	5,000,000
Accumulated depreciation (5-year DDB)	2,000,000

The corporation has never used robotic equipment before, and Warren assumed an accelerated method because of the rapidly changing technology in robotic equipment. The company normally uses straight-line depreciation for production equipment.

Aston explains to Warren that it is important for the corporation to show a $7,000,000 income before taxes because Aston receives a $1,000,000 bonus if the income before taxes and bonus reaches $7,000,000. Aston also does not want the company to pay more than $1,200,000 in income taxes to the government.

Instructions

a. What can Warren do within GAAP to accommodate the president's wishes to achieve $7,000,000 in income before taxes and bonus? Present the revised income statement based on your decision.

b. Are the actions ethical? Who are the stakeholders in this decision, and what effect do Warren's actions have on their interests?

P21.6 (LO 1, 3, 4) Excel (Accounting Change and Error Analysis) On December 31, 2025, before the books were closed, the management and accountants of Madrasa Inc. made the following determinations about three pieces of equipment.

1. Equipment A was purchased January 2, 2022. It originally cost $540,000 and, for depreciation purposes, the straight-line method was originally chosen. The asset was originally expected to be useful for 10 years and have a zero salvage value. In 2025, the decision was made to change the depreciation method from straight-line to sum-of-the-years'-digits, and the estimates relating to useful life and salvage value remained unchanged.
2. Equipment B was purchased January 3, 2021. It originally cost $180,000 and, for depreciation purposes, the straight-line method was chosen. The asset was originally expected to be useful for 15 years and have a zero residual value. In 2025, the decision was made to shorten the total life of this asset to 9 years and to estimate the residual value at $3,000.
3. Equipment C was purchased January 5, 2021. The asset's original cost was $160,000, and this amount was entirely expensed in 2021. This particular asset has a 10-year useful life and no residual value. The straight-line method was chosen for depreciation purposes.

Additional data:

1. Income in 2025 before depreciation expense amounted to $400,000.
2. Depreciation expense on assets other than A, B, and C totaled $55,000 in 2025.
3. Income in 2024 was reported at $370,000.
4. Ignore all income tax effects.
5. 100,000 shares of common stock were outstanding in 2024 and 2025.

Instructions

a. Prepare all necessary entries in 2025 to record these determinations.

b. Prepare comparative retained earnings statements for Madrasa Inc. for 2024 and 2025. The company had retained earnings of $200,000 at December 31, 2023.

P21.7 (LO 3, 4) Groupwork (Error Corrections) You have been assigned to examine the financial statements of Zarle Company for the year ended December 31, 2025. You discover the following situations.

1. Depreciation of $3,200 for 2025 on delivery vehicles was not recorded.
2. The physical inventory count on December 31, 2024, improperly excluded merchandise costing $19,000 that had been temporarily stored in a public warehouse. Zarle uses a periodic inventory system.

3. A collection of $5,600 on account from a customer received on December 31, 2025, was not recorded until January 2, 2026.
4. In 2025, the company sold for $3,700 fully depreciated equipment that originally cost $25,000. The company credited the proceeds from the sale to the Equipment account.
5. During November 2025, a competitor company filed a patent-infringement suit against Zarle claiming damages of $220,000. The company's legal counsel has indicated that an unfavorable verdict is probable and a reasonable estimate of the court's award to the competitor is $125,000. The company has not recorded or disclosed this situation in the financial statements.
6. Zarle has a portfolio of trading investments. No entry has been made to adjust to market. Information on cost and fair value is as follows.

	Cost	Fair Value
December 31, 2024	$95,000	$95,000
December 31, 2025	$84,000	$82,000

7. At December 31, 2025, an analysis of payroll information shows accrued salaries of $12,200. The Salaries and Wages Payable account had a balance of $16,000 at December 31, 2025, which was unchanged from its balance at December 31, 2024.
8. A large piece of equipment was purchased on January 3, 2025, for $40,000 and was charged to Maintenance and Repairs Expense. The equipment is estimated to have a service life of 8 years and no residual value. Zarle normally uses the straight-line depreciation method for this type of equipment.
9. A $12,000 insurance premium paid on July 1, 2024, for a policy that expires on June 30, 2027, was charged to Insurance Expense.
10. A trademark was acquired at the beginning of 2024 for $50,000. No amortization has been recorded since its acquisition. The maximum allowable amortization period is 10 years.

Instructions

Assume the trial balance has been prepared but the books have not been closed for 2025. Assuming all amounts are material, prepare journal entries showing the adjustments that are required. (Ignore income tax considerations.)

P21.8 (LO 3, 4) Groupwork (Comprehensive Error Analysis) On March 5, 2026, you were hired by Hemingway Inc., a closely held company, as a staff member of its newly created internal auditing department. While reviewing the company's records for 2024 and 2025, you discover that no adjustments have yet been made for the following items.

Items

1. Interest income of $14,100 was not accrued at the end of 2024. It was recorded when received in February 2025.
2. A computer costing $4,000 was expensed when purchased on July 1, 2024. It is expected to have a 4-year life with no salvage value. The company typically uses straight-line depreciation for all fixed assets.
3. Research and development costs of $33,000 were incurred early in 2024. They were capitalized and were to be amortized over a 3-year period. Amortization of $11,000 was recorded for 2024 and $11,000 for 2025.
4. On January 2, 2024, Hemingway leased a building for 5 years at a monthly rental of $8,000. On that date, the company paid the following amounts, which were expensed when paid.

Security deposit	$20,000
First month's rent	8,000
Last month's rent	8,000
	$36,000

5. The company received $36,000 from a customer at the beginning of 2024 for services that it is to perform evenly over a 3-year period beginning in 2024. None of the amount received was reported as unearned revenue at the end of 2024.
6. Merchandise inventory costing $18,200 was in the warehouse at December 31, 2024, but was incorrectly omitted from the physical count at that date. The company uses the periodic inventory method.

Instructions

Indicate the effect of any errors on the net income figure reported on the income statement for the year ending December 31, 2024, and the retained earnings figure reported on the balance sheet at December 31, 2025. Assume all amounts are material, and ignore income tax effects. Using the following format, enter the appropriate dollar amounts in the appropriate columns. Consider each item independent of the other items. It is not necessary to total the columns on the grid.

	Net Income for 2024		Retained Earnings at 12/31/25	
Item	Understated	Overstated	Understated	Overstated

(CIA adapted)

P21.9 (LO 3, 4) (Error Analysis) Lowell Corporation has used the accrual basis of accounting for several years. A review of the records, however, indicates that some expenses and revenues have been handled on a cash basis because of errors made by an inexperienced bookkeeper. Income statements prepared by the bookkeeper reported $29,000 net income for 2024 and $37,000 net income for 2025. Further examination of the records reveals that the following items were handled improperly.

1. Rent was received from a tenant in December 2024. The amount, $1,000, was recorded as revenue at that time even though the rental pertained to 2025.
2. Salaries and wages payable on December 31 have been consistently omitted from the records of that date and have been entered as expenses when paid in the following year. The amounts of the accruals recorded in this manner were:

December 31, 2023	$1,100
December 31, 2024	1,200
December 31, 2025	940

3. Invoices for supplies purchased have been charged to expense accounts when received. Inventories of supplies on hand at the end of each year have been ignored, and no entry has been made for them.

December 31, 2023	$1,300
December 31, 2024	940
December 31, 2025	1,420

Instructions

Prepare a schedule that will show the corrected net income for the years 2024 and 2025. All items listed should be labeled clearly. (Ignore income tax considerations.)

P21.10 (LO 3, 4) (Error Analysis and Correcting Entries) You have been asked by a client to review the records of Roberts Company, a small manufacturer of precision tools and machines. Your client is interested in buying the business, and arrangements have been made for you to review the accounting records. Your examination reveals the following information.

1. Roberts Company commenced business on April 1, 2023, and has been reporting on a fiscal year ending March 31. The company has never been audited, but the annual statements prepared by the bookkeeper reflect the following income before closing and before deducting income taxes.

Year Ended March 31	Income Before Taxes
2024	$ 71,600
2025	111,400
2026	103,580

2. A relatively small number of machines have been shipped on consignment. These transactions have been recorded as ordinary sales and billed as such. On March 31 of each year, machines billed and in the hands of consignees amounted to:

2024	$6,500
2025	none
2026	5,590

Sales price was determined by adding 25% to cost. Assume that the consigned machines are sold the following year.

3. On March 30, 2025, two machines were shipped to a customer on a C.O.D. basis. The sale was not entered until April 5, 2025, when cash was received for $6,100. The machines were not included in the inventory at March 31, 2025. (Title passed on March 30, 2025.)
4. All machines are sold subject to a 5-year warranty. It is estimated that the expense ultimately to be incurred in connection with the warranty will amount to ½ of 1% of sales. The company has charged an expense account for warranty costs incurred.

Sales per books and warranty costs were as follows.

Year Ended March 31	Sales	Warranty Expense for Sales Made in 2024	2025	2026	Total
2024	$ 940,000	$760			$ 760
2025	1,010,000	360	$1,310		1,670
2026	1,795,000	320	1,620	$1,910	3,850

5. Bad debts have been recorded on a direct write-off basis. Experience of similar enterprises indicates that losses will approximate 1% of receivables. Bad debts written off were:

	Bad Debts Incurred on Sales Made in				
	2024	2025	2026	Total	Bad Debt Expense Based on 1% of Receivables
2024	$750			$ 750	$2,334
2025	800	$ 520		1,320	2,557
2026	350	1,800	$1,700	3,850	4,458

6. The bank deducts 6% on all contracts financed. Of this amount, ½% is placed in a reserve to the credit of Roberts Company that is refunded to Roberts as finance contracts are paid in full. (Thus, Roberts should have a receivable for these payments and should record revenue when the net balance is remitted each year.) The reserve established by the bank has not been reflected in the books of Roberts. The excess of credits over debits (net increase) to the reserve account with Roberts on the books of the bank for each fiscal year were as follows.

2024	$ 3,000
2025	3,900
2026	5,100
	$12,000

7. Commissions on sales have been entered when paid. Commissions payable on March 31 of each year were as follows.

2024	$1,400
2025	900
2026	1,120

8. A review of the corporate minutes reveals the manager is entitled to a bonus of 1% of the income before deducting income taxes and the bonus. The bonuses have never been recorded or paid.

Instructions

a. Present a schedule showing the revised income before income taxes for each of the years ended March 31, 2024, 2025, and 2026. (Make computations to the nearest whole dollar.)

b. Prepare the journal entry or entries you would give the bookkeeper to correct the books. Assume the books have not yet been closed for the fiscal year ended March 31, 2026. Disregard correction of income taxes.

(AICPA adapted)

***P21.11 (LO 5) (Fair Value to Equity Method with Goodwill)** On January 1, 2025, Millay Inc. paid $700,000 for 10,000 shares of Genso Company's voting common stock, which was a 10% interest in Genso. Millay does not have the ability to exercise significant influence over the operating and financial policies of Genso. Millay received dividends of $1.50 per share from Genso on October 1, 2025. Genso reported net income of $550,000 for the year ended December 31, 2025. The cost and fair value of Genso common stock was the same at December 31, 2025.

On July 1, 2026, Millay paid $2,325,000 for 30,000 additional shares of Genso Company's voting common stock, which represents an additional 30% investment in Genso. As a result of this transaction, Millay has the ability to exercise significant influence over the operating and financial policies of Genso. Millay received dividends of $2.00 per share from Genso on April 1, 2026, and $2.50 per share on October 1, 2026. Genso reported net income of $650,000 for the year ended December 31, 2026, and $350,000 for the 6 months ended December 31, 2026.

Instructions

(For both purchases, assume any excess of cost over book value is due to goodwill.)

a. Prepare a schedule showing the income or loss before income taxes for the year ended December 31, 2025, that Millay should report from its investment in Genso in its income statement issued in March 2026.

b. During March 2027, Millay issues comparative financial statements for 2025 and 2026. Prepare schedules showing the income or loss before income taxes for the years ended December 31, 2025 and 2026, that Millay should report from its investment in Genso.

(AICPA adapted)

***P21.12 (LO 5) (Change from Fair Value to Equity Method)** On January 3, 2024, Martin Company purchased for $500,000 cash a 10% interest in Renner Corp. The fair value of Martin's investment in Renner securities is as follows: December 31, 2024, $560,000, and December 31, 2025, $515,000. On January 2, 2026, Martin purchased an additional 30% of Renner's stock for $1,545,000 cash.

During 2024, 2025, and 2026, the following occurred.

	Renner Net Income	Dividends Paid by Renner to Martin
2024	$350,000	$15,000
2025	450,000	20,000
2026	550,000	70,000

Instructions

On the books of Martin Company, prepare all journal entries in 2024, 2025, and 2026 that relate to its investment in Renner Corp., reflecting the data above and a change from the fair value method to the equity method.

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ21.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. Were there changes in accounting principles reported by P&G during the three years covered by its income statements (2018–2020)? If so, describe the nature of the change and the year of change.

b. What types of estimates did P&G discuss in 2020?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ21.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. Identify the changes in accounting principles reported by Coca-Cola during the 3 years covered by its income statements (2018–2020). Describe the nature of the change and the year of change.

b. Identify the changes in accounting principles reported by PepsiCo during the 3 years covered by its income statements (2018–2020). Describe the nature of the change and the year of change.

c. What types of estimates did PepsiCo discuss in 2020?

Accounting, Analysis, and Principles

UYJ21.3 In preparation for significant expansion of its international operations, ABC Co. has adopted a plan to gradually shift to the same accounting methods as used by its international competitors. Part of this plan includes a switch from LIFO inventory accounting to FIFO (recall that IFRS does not allow LIFO). ABC decides to make the switch to FIFO at January 1, 2025. The following data pertains to ABC's 2025 financial statements (in millions of dollars).

Sales revenue	$550
Inventory purchases	350
12/31/25 inventory (using FIFO)	580
Compensation expense	17

All sales and purchases were with cash. All of 2025's compensation expense was paid with cash. (Ignore taxes.) ABC's property, plant, and equipment cost $400 million and has an estimated useful life of 10 years with no salvage value.

ABC Co. reported the following for fiscal 2024 (in millions of dollars).

ABC Co.
Balance Sheet
At December 31, 2024

	2024	2023		2024	2023
Cash	$ 365	$ 200	Common stock	$ 500	$ 500
Inventory	500	480	Retained earnings	685	540
Property, plant, and equipment	400	400			
Accumulated depreciation	(80)	(40)			
Total assets	$1,185	$1,040	Total equity	$1,185	$1,040

ABC Co.
Income Statement
For the Year Ended December 31, 2024

	2024
Sales revenue	$ 500
Cost of goods sold	(300)
Depreciation expense	(40)
Compensation expense	(15)
Net income	$ 145

Summary of Significant Accounting Policies

Inventory: The company accounts for inventory by the LIFO method. The current cost of the company's inventory, which approximates FIFO, was $60 and $50 higher at the end of fiscal 2024 and 2023, respectively, than those reported in the balance sheet.

Accounting

Prepare ABC's December 31, 2025, balance sheet and an income statement for the year ended December 31, 2025. In columns beside 2025's numbers, include 2024's numbers *as they would appear in the 2025 financial statements* for comparative purposes.

Analysis

Compute ABC's inventory turnover for 2024 and 2025 under both LIFO and FIFO. Assume averages are equal to year-end balances where necessary. What causes the differences in this ratio between LIFO and FIFO?

Principles

Briefly explain, in terms of the principles discussed in Chapter 1, why GAAP requires that companies that change accounting methods recast prior year's financial statement data.

Developing Your Professional Skills

Critical-Thinking Cases

CT21.1 (LO 1, 2, 3) Groupwork (Analysis of Various Accounting Changes and Errors) Mathys Inc. has recently hired a new independent auditor, Karen Ogleby, who says she wants "to get everything straightened out." Consequently, she has proposed the following accounting changes in connection with Mathys Inc.'s 2025 financial statements.

1. At December 31, 2024, the client had a receivable of $820,000 from Hendricks Inc. on its balance sheet. Hendricks Inc. has gone bankrupt, and no recovery is expected. The client proposes to write off the receivable as a prior period item.
2. The client proposes the following changes in depreciation policies.
   a. For office furniture and fixtures, it proposes to change from a 10-year useful life to an 8-year life. If this change had been made in prior years, retained earnings at December 31, 2024, would have been $250,000 less. The effect of the change on 2025 income alone is a reduction of $60,000.
   b. For its new equipment in the leasing division, the client proposes to adopt the sum-of-the-years'-digits depreciation method. The client had never used SYD before. The first year the client operated a leasing division was 2025. If straight-line depreciation were used, 2025 income would be $110,000 greater.

3. In preparing its 2024 statements, one of the client's bookkeepers overstated ending inventory by $235,000 because of a mathematical error. The client proposes to treat this item as a prior period adjustment.
4. In the past, the client has spread preproduction costs in its furniture division over 5 years. Because its latest furniture is of the "fad" type, it appears that the largest volume of sales will occur during the first 2 years after introduction. Consequently, the client proposes to amortize preproduction costs on a per-unit basis, which will result in expensing most of such costs during the first 2 years after the furniture's introduction. If the new accounting method had been used prior to 2025, retained earnings at December 31, 2024, would have been $375,000 less.
5. For the nursery division, the client proposes to switch from FIFO to LIFO inventories because it believes that LIFO will provide a better matching of current costs with revenues. The effect of making this change on 2025 earnings will be an increase of $320,000. The client says that the effect of the change on December 31, 2024, retained earnings cannot be determined.
6. To achieve an appropriate recognition of revenues and expenses in its building construction division, the client proposes to switch from the cost-recovery method of accounting to the percentage-of-completion method. Had the percentage-of-completion method been employed in all prior years, retained earnings at December 31, 2024, would have been $1,075,000 greater.

Instructions

a. For each of the changes described above, decide whether:

1. The change involves an accounting principle, accounting estimate, or correction of an error.
2. Restatement of opening retained earnings is required.

b. What would be the proper adjustment to the December 31, 2024, retained earnings?

CT21.2 (LO 1, 2, 3) (Analysis of Various Accounting Changes and Errors) Various types of accounting changes can affect the financial statements of a business enterprise differently. Assume that the following list describes changes that have a material effect on the financial statements for the current year of your business enterprise.

1. A change from the cost-recovery method to the percentage-of-completion method of accounting for long-term construction-type contracts.
2. A change in the estimated useful life of previously recorded fixed assets as a result of newly acquired information.
3. A change from deferring and amortizing preproduction costs to recording such costs as an expense when incurred because future benefits of the costs have become doubtful. The new accounting method was adopted in recognition of the change in estimated future benefits.
4. A change from including the employer share of FICA taxes with payroll tax expenses to including it with "Retirement benefits" on the income statement.
5. Correction of a mathematical error in inventory pricing made in a prior period.
6. A change from presentation of statements of individual companies to presentation of consolidated statements.
7. A change in the method of accounting for leases for tax purposes to conform with the financial accounting method. As a result, both deferred and current taxes payable changed substantially.
8. A change from the FIFO method of inventory pricing to the LIFO method of inventory pricing.

Instructions

Identify the type of change that is described in each item above and indicate whether the prior year's financial statements should be recast when presented in comparative form with the current year's financial statements.

CT21.3 (LO 1, 2, 3) (Analysis of Three Accounting Changes and Errors) The following are three independent, unrelated sets of facts relating to accounting changes.

Situation 1: Sanford Company is in the process of having its first audit. The company has used the cash basis of accounting for revenue recognition. Sanford president, B. J. Jimenez, is willing to change to the accrual method of revenue recognition.

Situation 2: Hopkins Co. decides in January 2026 to change from FIFO to weighted-average pricing for its inventories.

Situation 3: Marshall Co. determined that the depreciable lives of its fixed assets are too long at present to fairly match the cost of the fixed assets with the revenue produced. The company decided at the beginning of the current year to reduce the depreciable lives of all of its existing fixed assets by 5 years.

Instructions

For each of the situations described, provide the information indicated below.

a. Type of accounting change.

b. Manner of reporting the change under current generally accepted accounting principles, including a discussion where applicable of how amounts are computed.

c. Effect of the change on the balance sheet and income statement.

CT21.4 (LO 1, 2, 3) Writing (Analysis of Various Accounting Changes and Errors) Katherine Irving, controller of Lotan Corp., is aware of a pronouncement on accounting changes. After reading the pronouncement, she is confused about what action should be taken on the following items related to Lotan Corp. for the year 2025.

1. In 2025, Lotan decided to change its policy on accounting for certain marketing costs. Previously, the company had chosen to defer and amortize all marketing costs over at least 5 years because Lotan believed that a return on these expenditures did not occur immediately. Recently, however, the time differential has considerably shortened, and Lotan is now expensing the marketing costs as incurred.
2. In 2025, the company examined its entire policy relating to the depreciation of plant equipment. Plant equipment had normally been depreciated over a 15-year period, but recent experience has indicated that the company was incorrect in its estimates and that the assets should be depreciated over a 20-year period.
3. One division of Lotan Corp., Hawthorne Co., has consistently shown an increasing net income from period to period. On closer examination of its operating statement, it is noted that bad debt expense and inventory obsolescence charges are much lower than in other divisions. In discussing this with the controller of this division, it has been learned that the controller has increased his net income each period by knowingly making low estimates related to the write-off of receivables and inventory.
4. In 2025, the company purchased new machinery that should increase production dramatically. The company has decided to depreciate this machinery on an accelerated basis, even though other machinery is depreciated on a straight-line basis.
5. All equipment sold by Lotan is subject to a 3-year warranty. It has been estimated that the expense ultimately to be incurred on these machines is 1% of sales. In 2025, because of a production breakthrough, it is now estimated that ½ of 1% of sales is sufficient. In 2023 and 2024, warranty expense was computed as $64,000 and $70,000, respectively. The company now believes that these warranty costs should be reduced by 50%.
6. In 2025, the company decided to change its method of inventory pricing from average-cost to the FIFO method. The effect of this change on prior years is to increase 2023 income by $65,000 and increase 2024 income by $20,000.

Instructions

Katherine Irving has come to you, as her CPA, for advice about the situations above. Prepare a report, indicating the appropriate accounting treatment that should be given for each of these situations.

CT21.5 (LO 1, 2) Writing (Change in Principle, Estimate) As a certified public accountant, you have been contacted by Joe Davison, CEO of Sports-Pro Athletics, Inc., a manufacturer of a variety of athletic equipment. He has asked you how to account for the following changes.

1. Sports-Pro appropriately changed its depreciation method for its machinery from the double-declining-balance method to the units-of-production method effective January 1, 2025.
2. Effective January 1, 2025, Sports-Pro appropriately changed the salvage values used in computing depreciation for its office equipment.
3. On December 31, 2025, Sports-Pro appropriately changed the specific subsidiaries constituting the group of companies for which consolidated financial statements are presented.

Instructions

Write a 1–1.5 page letter to Joe Davison explaining how each of the above changes should be presented in the December 31, 2025, financial statements.

CT21.6 (LO 2) Ethics (Change in Estimate) Mike Crane is an audit senior of a large public accounting firm who has just been assigned to the Frost Corporation's annual audit engagement. Frost has been a client of Crane's firm for many years. Frost is a fast-growing business in the commercial construction industry. In reviewing the fixed asset ledger, Crane discovered a series of unusual accounting changes, in which the useful lives of assets, depreciated using the straight-line method, were substantially lowered near the midpoint of the original estimate. For example, the useful life of one dump truck was changed from 10 to 6 years during its fifth year of service. Upon further investigation, Mike was told

by Kevin James, Frost's accounting manager, "I don't really see your problem. After all, it's perfectly legal to change an accounting estimate. Besides, our CEO likes to see big earnings!"

Instructions

Answer the following questions.

a. What are the ethical issues concerning Frost's practice of changing the useful lives of fixed assets?

b. Who could be harmed by Frost's unusual accounting changes?

c. What should Crane do in this situation?

FASB Codification References

[1] FASB ASC 250-10-05-1. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005).]

[2] FASB ASC 250-10-05-2. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005).]

[3] FASB ASC 250-10-50-1. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. 17.]

[4] FASB ASC 250-10-50-1. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. B19.]

[5] FASB ASC 250-10-45-6. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), paras. 8–11.]

[6] FASB ASC 250-10-50-1. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. 17.]

[7] FASB ASC 250-10-45-18. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. 20.]

[8] FASB ASC 250-10-45-24. [Predecessor literature: "Prior Period Adjustments," *Statement of Financial Accounting Standards No. 16* (Stamford, Conn.: FASB, 1977), p. 5.]

[9] FASB ASC 250-10-50-4. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. 2.]

[10] FASB ASC 250-10-50-7. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. 26.]

[11] FASB ASC 323-10-35-3 and ASC 323-10-65-2. [Predecessor literature: "The Equity Method of Accounting for Investments in Common Stock," *Opinions of the Accounting Principles Board No. 18* (New York: AICPA, 1971), par. 17.]

[12] FASB ASC 250-10-50-1. [Predecessor literature: "Accounting Changes and Error Corrections," *Statement of Financial Accounting Standards No. 154* (Stamford, Conn.: FASB, 2005), par. 2.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE21.1 Access the glossary ("Master Glossary") to answer the following.

a. What is a change in accounting estimate?

b. What is a change in accounting principle?

c. What is a restatement?

d. What is the definition of "retrospective application"?

CE21.2 When a company has to restate its financial statements to correct an error, what information must the company disclose?

CE21.3 What reporting requirements does retrospective application require?

CE21.4 If a company registered with the SEC justifies a change in accounting method as preferable under the circumstances, and the circumstances change, can that company switch back to its prior method of accounting before the change? Why or why not?

Codification Research Case

As part of the year-end accounting process and review of operating policies, Cosper Co. is considering a change in the accounting for its equipment from the straight-line method to an accelerated method. Your supervisor wonders how the company will report this change in principle. He read in a newspaper article that the FASB has issued a standard in this area and has changed GAAP for a "change in estimate that is effected by a change in accounting principle." (Thus, the accounting may be different from what he

learned in intermediate accounting.) Your supervisor wants you to research the authoritative guidance on a change in accounting principle related to depreciation methods.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. What are the accounting and reporting guidelines for a change in accounting principle related to depreciation methods?

b. What are the conditions that justify a change in depreciation method, as contemplated by Cosper Co.?

c. What guidance does the SEC provide concerning the impact that recently issued accounting standards will have on the financial statements in a future period?

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

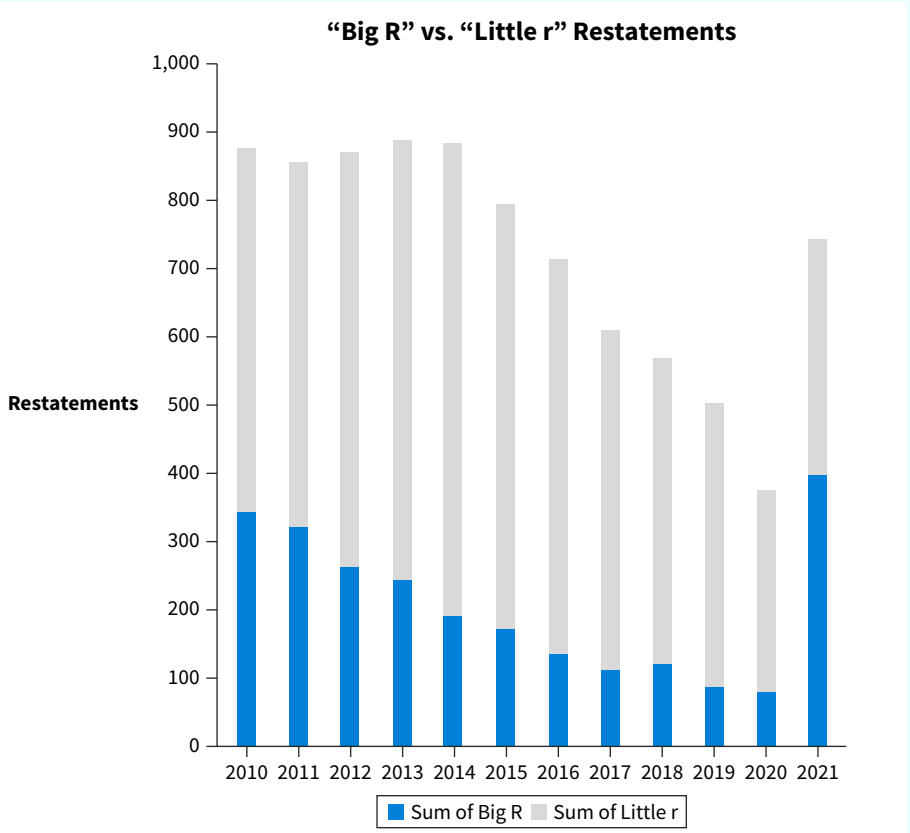
Analytics in Action Activities

Using Data Analytics to Highlight Trends of Restatement versus Revision

Excel

DA21.1 When companies identify an error in previously issued financial statements, they must correct it, whether big or small. Material errors require restatement of previously issued financial statements and a notification to investors. Errors deemed immaterial can be fixed by revising previous financial statements and do not require companies to alert their investors. What makes an error material? This can be subjective and often relies on management judgment.

Data analytics can help investors understand trends in how companies are classifying error corrections. A visualization like the following allows us to quickly see a declining trend in the number of material misstatements reported from 2010–2020, followed by a sharp increase in 2021.



What does this visualization mean? Why the change in 2021? Analytics might not give us all the answers, but it can help increase transparency and point investors to important trends.

Required

Using raw data from **Audit Analytics** on financial restatements over a 12-year period, you will use Excel to organize and clean the data. From there, using Excel pivot tables and charts, you will create a visualization to show trends in error classifications over time.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 6

Compare the procedures for accounting changes and error analysis under GAAP and IFRS.

The IFRS addressing accounting and reporting for changes in accounting principles, changes in estimates, and errors is *IAS 8* ("Accounting Policies, Changes in Accounting Estimates and Errors"). Various presentation issues related to restatements are addressed in *IAS 1* ("Presentation of Financial Statements"). As indicated in the chapter, the FASB has issued guidance on changes in accounting principles, changes in estimates, and corrections of errors, which essentially converges GAAP to *IAS 8*. Following are the key similarities and differences between GAAP and IFRS related to the procedures for accounting changes.

Similarities

- The accounting for changes in estimates is similar between GAAP and IFRS.
- Under GAAP and IFRS, if determining the effect of a change in accounting policy is considered impracticable, then a company should report the effect of the change in the period in which it believes it practicable to do so, which may be the current period.

Differences

- One area in which GAAP and IFRS differ is the reporting of error corrections in previously issued financial statements. While both sets of standards require restatement, GAAP is an absolute standard—that is, there is no exception to this rule.
- Under IFRS, the impracticality exception applies both to changes in accounting principles and to the correction of errors. Under GAAP, this exception applies only to changes in accounting principle.
- IFRS (*IAS 8*) does not specifically address the accounting and reporting for indirect effects of changes in accounting principles. As indicated in the chapter, GAAP has detailed guidance on the accounting and reporting of indirect effects.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 22

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Statement of Cash Flows

WHAT is the statement of cash flows?

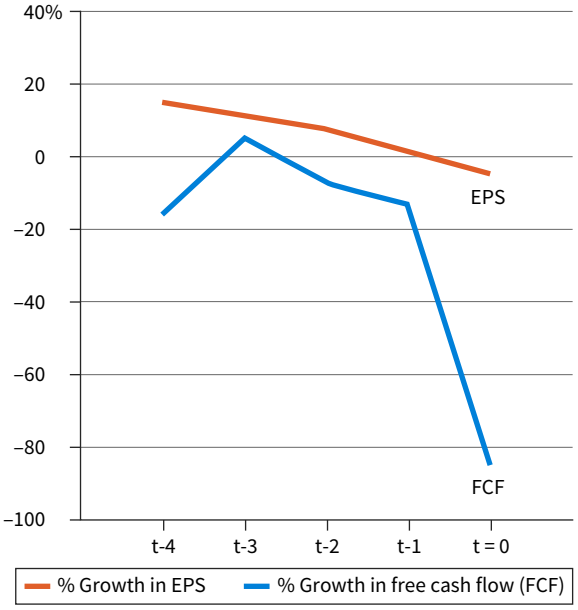
As you have learned, the statement of cash flows is one of the four primary financial statements that companies are required to prepare each year. The balance sheet, income statement, and retained earnings statement provide limited information about a company's cash flows. The statement of cash flows provides relevant information about the cash receipts and cash payments of a company during a period, classified as operating, investing, or financing activities.

WHY is understanding the statement of cash flows important?

Many financial statement users carefully analyze the statement of cash flows when making lending and investing decisions. One survey found that investors and analysts are looking for answers to these key questions from a company's statement of cash flows:[1]

- **Does earnings growth drive cash growth?** If a company's net income is increasing, but cash flow is not, users will wonder why.
- **How does cash flow compare to peers?** It may be easier to compare cash flow from operations across companies because it does not include estimates or the impact of accounting policy selections like the determination of net income.
- **Is free cash flow positive?** Free cash flow is cash flow from operating activities **less** cash paid for capital expenditures and dividends. If free cash flow is positive, it means a company's operations are generating more cash than is needed to run the business.

IBM's Financial Flexibility



Source: A. Shields, "Why IBM Has Generated Higher Earnings Despite Falling Revenue," *Market Realist* (July 2014).

The experience at **IBM** illustrates well red flags as to the company's financial flexibility, based on free cash flow. As shown in the adjacent chart, IBM's earnings per share (EPS) growth held steady, but growth in free cash flow was on the decline. A look under the hood indicates that IBM had been using free cash flow for increased dividends and share buybacks. Recall that buybacks increase EPS by reducing shares outstanding. However, some analysts believed that those cash flows should have been allocated to R&D. That is, free cash flow going toward dividends and share repurchases indicated IBM's low quality of earnings and reduced financial flexibility.

HOW do companies prepare the statement of cash flows?

Just like the other financial statements, there is a standard format used for the statement of cash flows. Companies classify cash flows into one of three categories: operating, investing, and financing activities. In addition, noncash investing and financing are separately disclosed. For the operating activities section, companies can use either a direct or indirect method to determine net cash flows from operating activities. We will cover both methods in this chapter. However, surveys indicate that a large majority of companies use the indirect method.

[1]PwC, "Cash Flows: Can Stakeholders Tell Where Your Money Is Going?" *In the Loop* (November 2019).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 22.1 Describe the usefulness and format of the statement of cash flows.	**22.1 Overview of Statement of Cash Flows** • Usefulness of statement • Classification of cash flows • Format of statement	Put It into Practice LO 22.1 Classify Cash Flows
LO 22.2 Prepare a statement of cash flows.	**22.2 Preparing the Statement of Cash Flows** • Examples—Evergreen Inc. • Sources of information • Additional adjustments	Examples (Example statements of cash flows are shown throughout discussion.) Put It into Practice LO 22.2 Prepare Statement of Cash Flows
LO 22.3 Contrast the direct and indirect methods of calculating net cash flow from operating activities.	**22.3 Net Cash flow from Operating Activities—Direct Method** • Implementing the direct method • Summary	Examples (Example statement of cash flows using the direct method is shown in discussion.) Put It into Practice LO 22.3 Determine Cash Flow from Operating Activities—Direct Method
LO 22.4 Discuss special problems in preparing a statement of cash flows.	**22.4 Special Problems in Statement Preparation** • Adjustments to net income • Accounts receivable (net) • Other working capital changes • Net losses • Significant noncash transactions	Examples 22.1 Equity Method 22.2 Reporting a Gain with the Indirect Method 22.3 Unrealized Gains and Losses 22.4 Stock Compensation 22.5 Unusual and Infrequent Items 22.6 Net Loss, Positive Cash Flow 22.7 Net Loss, Negative Cash Flow Put It into Practice LO 22.4 Address Special Problems in Preparing the Statement of Cash Flows
LO 22.5 Explain the use of a worksheet in preparing a statement of cash flows.	**22.5 Use of a Worksheet** • Preparation of worksheet • Analysis of transactions • Preparation of final statement	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

22.1 Overview of Statement of Cash Flows

LEARNING OBJECTIVE 1

Describe the usefulness and format of the statement of cash flows.

Simply put, cash is essential for a company to operate. The primary purpose of the **statement of cash flows** is to provide information about a company's cash receipts and cash payments during a period. A secondary objective is to provide cash-basis information about the company's operating, investing, and financing activities. The statement of cash flows therefore reports cash receipts, cash payments, and net change in cash resulting from a company's operating, investing, and financing activities during a period. Its format reconciles the beginning and ending cash balances for the period.

Usefulness of the Statement of Cash Flows

The statement of cash flows provides information to help investors, creditors, and others assess the following [1]. (See the FASB Codification References near the end of the chapter.)

Underlying Concepts

Reporting information in the statement of cash flows contributes to meeting the objective of financial reporting.

1. **The entity's ability to generate future cash flows.** A primary objective of financial reporting is to provide information to predict the amounts, timing, and uncertainty of future cash flows. By examining relationships between items such as sales and net cash flow from operating activities, or net cash flow from operating activities and increases or decreases in cash, it is possible to better predict the future cash flows than is possible using accrual-basis data alone.
2. **The entity's ability to pay dividends and meet obligations.** Without adequate cash, a company cannot pay employees, settle debts, pay out dividends, or acquire equipment. A statement of cash flows indicates where the company's cash comes from and how the company uses its cash. Employees, creditors, stockholders, and customers should be particularly interested in this statement, because it alone shows the flows of cash in a business (see **Underlying Concepts**).
3. **The reasons for the difference between net income and net cash flow from operating activities.** The net income number is important: It provides information on the performance of a company from one period to another. But some people are critical of accrual-basis net income because companies must make estimates to calculate it. This is not the case with cash. Financial statement readers can benefit from knowing why a company's net income and net cash flow from operating activities differ and can assess for themselves the reliability of the income number.
4. **The investing and financing transactions during the period.** By examining a company's investing and financing activities, a financial statement reader can better understand why assets and liabilities increased or decreased during the period. For example, by reading the statement of cash flows, the reader might find answers to the following questions.
   - Why did cash decrease for **Home Depot** when it reported net income for the period?
   - How much did **Southwest Airlines** spend on property, plant, and equipment last year?
   - Did dividends paid by **Campbell's Soup** increase?
   - How much money did **Coca-Cola** borrow last year?
   - How much cash did **Hewlett-Packard** use to repurchase its common stock?

Classification of Cash Flows

Recall that companies report "cash and cash equivalents" as the first item in their comparative balance sheets. Although we use the term "cash" throughout our discussion and illustrations, we mean cash and cash equivalents when reporting the cash flows.[2] The statement of cash flows provides the detail of the change in cash from the prior year balance sheet to the current year balance sheet.

Illustration 22.1 classifies the typical cash receipts and payments of a company according to **operating, investing, and financing activities**. Take some time to study the illustration as it will be a good resource to use when you are preparing a statement of cash flows.

ILLUSTRATION 22.1
Classification of Typical Cash Inflows and Outflows

Classification	General Guidelines	Examples
Operating activities	Involves income statement items	Cash inflows from: • Sales of goods or services • Interest revenue from notes receivable • Dividends from equity investments Cash outflows to: • Suppliers for inventory • Employees for services • Government for taxes • Lenders for interest expense • Others for expenses
Investing activities	Involves cash flows from changes in investments and long-term asset items	Cash inflows from: • Sale of property, plant, and equipment • Sale of debt or equity investments • Collection of principal on loans to other entities (notes receivable) Cash outflows to: • Purchase property, plant, and equipment • Purchase debt or equity investments • Make loans to other entities (notes receivable)
Financing activities	Involves cash flows from changes in long-term liability and stockholders' equity items	Cash inflows from: • Sale of common and preferred stock • Issuance of debt (bonds and notes) Cash outflows to: • Stockholders as dividends • Lenders to pay off long-term debt • Stockholders to repurchase common stock (treasury stock)

[2] The basis recommended by the FASB for the statement of cash flows is actually "cash and cash equivalents." **Cash equivalents** are short-term, highly liquid investments that are both (a) readily convertible to known amounts of cash, and (b) so near their maturity that they present insignificant risk of changes in interest rates. Generally, only investments with original maturities of three months or less qualify under this definition. Examples of cash equivalents are Treasury bills, commercial paper, and money market funds purchased with cash that is in excess of immediate needs. Although we use the term "cash" throughout our discussion and illustrations, we mean cash and cash equivalents when reporting the cash flows and the net increase or decrease in cash.

The operating activities category is the most important. It shows the cash provided by company operations.

- This source of cash is generally considered to be the best measure of a company's ability to generate enough cash to continue as a going concern.
- It is important to emphasize this general rule: **items reported in operating activities are those that enter into the determination of net income.**

For example, paying interest expense to lenders seems like it would be a financing activity. The interest expense is the result of issuing debt, and issuing debt is a financing activity. However, as shown in Illustration 22.1, cash outflows to lenders for interest expense is listed as an operating activity, not a financing activity. Why? Because interest expense is subtracted in the calculation of net income on the income statement. Items that impact net income are reported in the operating activities section.

Companies classify some cash flows relating to investing or financing activities as operating activities.[3] For example, companies classify receipts of investment income (interest and dividends) and payments of interest to lenders as operating activities. Why are these considered operating activities? Companies report these items in the income statement, where the results of operations are shown.

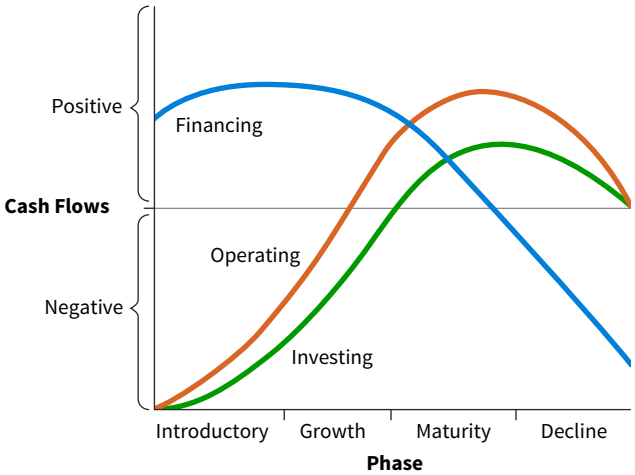
Conversely, companies classify some cash flows relating to operating activities as investing or financing activities. For example, a company classifies the cash received from the sale of property, plant, and equipment as an investing activity. Likewise, the payment (extinguishment) of debt is generally part of the cash outflow related to the repayment of the amount borrowed. It is therefore a financing activity.

Accounting Matters

How's My Cash Flow?

To evaluate overall cash flow, it is useful to understand where in the product life cycle a company is. Generally, companies move through several stages of development, which have implications for cash flow. As the following graph shows, the pattern of cash flows from operating, financing, and investing activities will vary depending on the stage of the product life cycle.

Cash Flows During Product Life Cycle



In the introductory phase, the product is likely not generating much revenue (operating cash flow is negative). Because the company is making heavy investments to get a product off the ground, cash flow from investment is negative, and financing cash flows are positive.

As the product moves to the growth and maturity phases, these cash flow relationships reverse. The product generates more cash flow from operations, which can be used to cover investments needed to support the product, and less cash is needed from financing. When **Netflix** began heavily investing in more original streaming content in 2018, its cash flow followed this pattern, reporting negative operating and investing cash flows of $2.7 billion and $339 million, respectively. For that same year, the company reported cash inflows from financing activities of $4 billion. By 2020, when the new "product" or streaming content was generating revenues, operating cash flows started to rebound. Netflix reported positive cash inflows from operating activities of $2.4 billion.

So, is a negative operating cash flow bad? Not always. It depends on the product life cycle.

Source: Adapted from Paul D. Kimmel, Jerry J. Weygandt, and Donald E. Kieso, *Financial Accounting: Tools for Business Decision Making*, 9th ed. (New York: John Wiley & Sons, 2019), pp. 12-18.

[3]Banks and brokers must classify cash flows from purchases and sales of loans and securities specifically for resale and carried at fair value **as operating activities**. This requirement recognizes that for these firms these assets are similar to inventory in other businesses. **[2]**

Format of the Statement of Cash Flows

The three activities we discussed in Illustration 22.1 constitute the general format of the statement of cash flows. The operating activities section always appears first. It is followed by the investing activities section and then the financing activities section.

A company reports the individual inflows and outflows from investing and financing activities separately. That is, a company reports them gross, not netted against one another. For example, a cash outflow from the purchase of one property is reported separately from the cash inflow from the sale of another property. Similarly, a cash inflow from the issuance of debt is reported separately from the cash outflow from the retirement of debt.

The net increase or decrease in cash reported during the period should reconcile the beginning and ending cash balances as reported in the comparative balance sheets. **Illustration 22.2** shows a widely used form of the statement of cash flows that we discuss in the next section (see **Global View**).

Global View

Both IFRS and GAAP specify that companies must classify cash flows as operating, investing, or financing. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

ILLUSTRATION 22.2
Format of the Statement of Cash Flows

Company Name
Statement of Cash Flows
Period Covered

Cash flows from operating activities		
Net income		XXX
Adjustments to reconcile net income to net cash provided (used) by operating activities:		
(List of individual items)	XXX	XXX
Net cash provided (used) by operating activities		XXX
Cash flows from investing activities		
(List of individual inflows and outflows)	XXX	
Net cash provided (used) by investing activities		XXX
Cash flows from financing activities		
(List of individual inflows and outflows)	XXX	
Net cash provided (used) by financing activities		XXX
Net increase (decrease) in cash		XXX
Cash at beginning of period		XXX
Cash at end of period		XXX

Put It into Practice LO 22.1
Classify Cash Flows

FACTS Gomez Corporation is preparing its 2025 statement of cash flows. Following are some of the cash activities that occurred during the year.

1. Purchased inventory.
2. Paid employees.
3. Paid dividends to stockholders.
4. Received interest revenue from an investment.
5. Sold goods to customers.
6. Paid utilities.
7. Purchased new delivery truck.
8. Purchased stock of another company.

INSTRUCTIONS

Classify the cash activities of Gomez as an operating, investing, or financing activity.

SOLUTION

1. Operating activity.
2. Operating activity.
3. Financing activity.
4. Operating activity.
5. Operating activity.
6. Operating activity.
7. Investing activity.
8. Investing activity.

22.2 Preparing the Statement of Cash Flows

LEARNING OBJECTIVE 2

Prepare a statement of cash flows.

The statement of cash flows is not prepared from an adjusted trial balance. The statement of cash flows requires detailed information concerning the changes in account balances that occurred between two points in time. An adjusted trial balance will not provide the necessary data. The statement of cash flows also deals with cash receipts and payments. As a result, the company must adjust the effects of the use of accrual accounting to determine cash flows. Therefore, the information to prepare this statement usually comes from three sources:

1. **Comparative balance sheets** provide the amount of the changes in assets, liabilities, and equities from the beginning to the end of the period.
2. **Current income statement data** help determine the amount of cash provided by or used by operations during the period.
3. **Selected transaction data** from the general ledger provide additional detailed information needed to determine how the company provided or used cash during the period.

Preparing the statement of cash flows from these data sources involves three major steps:

Determine the change in cash. A company can easily compute the difference between the beginning and the ending cash balance from examining its comparative balance sheets.

Determine the net cash flow from operating activities. This procedure is more complex and involves analyzing the current year's income statement, current assets and current liabilities on comparative balance sheets, and selected transaction data.

Determine net cash flows from investing and financing activities. A company must analyze all other changes in the balance sheet accounts to determine their effects on cash.

We now work through these three steps with several examples.

Examples—Evergreen Inc.

To illustrate the steps, we use data for Evergreen Inc. Evergreen provides sustainability consulting services and began operations in 2024. Our examples follow the preparation of the statement of cash flows for the years 2024, 2025, and 2026.

Example 22.1—2024

Evergreen started on January 1, 2024, when it issued 60,000 shares of $1 par value common stock for $60,000 cash. The company rented its office space, furniture, and equipment, and performed sustainability consulting services throughout the first year. The comparative balance sheets at the beginning and end of the year 2024 are shown in Illustration 22.3.

Evergreen Inc.
Comparative Balance Sheets

	Dec. 31, 2024	Jan. 1, 2024	Change Increase/Decrease
Assets			
Cash	$49,000	$–0–	$49,000 Increase
Accounts receivable	36,000	–0–	36,000 Increase
Total	$85,000	$–0–	
Liabilities and Stockholders' Equity			
Accounts payable	$ 5,000	$–0–	$ 5,000 Increase
Common stock ($1 par)	60,000	–0–	60,000 Increase
Retained earnings	20,000	–0–	20,000 Increase
Total	$85,000	$–0–	

ILLUSTRATION 22.3 Comparative Balance Sheets, Evergreen Inc., 2024

Illustration 22.4 shows the income statement and additional information for Evergreen.

Evergreen Inc.
Income Statement
For the Year Ended December 31, 2024

Revenues	$125,000
Operating expenses	85,000
Income before income taxes	40,000
Income tax expense	6,000
Net income	$ 34,000

Additional Information
Examination of selected data indicates that a dividend of $14,000 was declared and paid during the year.

ILLUSTRATION 22.4 Income Statement, Evergreen Inc., 2024

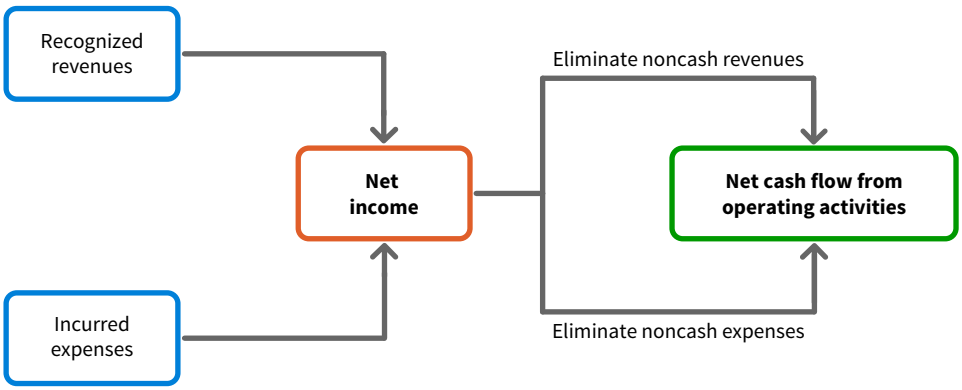
Step 1: Determine the Change in Cash To prepare a statement of cash flows, the first step is to **determine the change in cash**. This is a simple computation. Evergreen had no cash on hand at the beginning of the year 2024. It had $49,000 on hand at the end of 2024. Cash changed, or increased, in 2024 by $49,000.

Step 2: Determine Net Cash Flow from Operating Activities To determine net cash flow from operating activities, companies adjust net income in numerous ways. A useful starting point is to understand why net income must be converted to net cash provided by operating activities.

Under GAAP, most companies use the accrual basis of accounting. This basis requires that companies record revenue when a performance obligation is satisfied and record expenses when incurred. For example, revenues may include credit sales for which the company has not yet collected cash, or expenses incurred may include some items that the company has not yet paid in cash. Thus, under the accrual basis of accounting, net income is not the same as net cash flow from operating activities.

To arrive at net cash flow from operating activities, a company must determine revenues and expenses on a **cash basis**. **It does this by eliminating the effects of income statement transactions that do not result in an increase or decrease in cash.** **Illustration 22.5** shows the relationship between net income and net cash flow from operating activities.

ILLUSTRATION 22.5 Net Income versus Net Cash Flow from Operating Activities



In this chapter, we use the term net income to refer to accrual-based net income. A company may convert net income to net cash flow from operating activities through either a direct method or an indirect method. Due to its widespread use in practice, in the following sections we illustrate use of the indirect method. Later in the chapter, we describe the direct method and discuss the advantages and disadvantages of the two methods.

The **indirect method** (or **reconciliation method**) starts with net income and converts it to net cash flow from operating activities. In other words, **the indirect method adjusts net income for items that affected reported net income but did not affect cash.** To compute net cash flow from operating activities, a company adds back noncash charges in the income statement to net income and deducts noncash credits. We explain the two adjustments to net income for Evergreen, namely, the increases in accounts receivable and accounts payable, as follows.

- **Increase in Accounts Receivable—Indirect Method.** Evergreen's accounts receivable increased by $36,000 (from $0 to $36,000) during the year. For Evergreen, this means that cash receipts were $36,000 lower than revenues. The Accounts Receivable account in **Illustration 22.6** shows that Evergreen had $125,000 in revenues as reported on the income statement. If the ending accounts receivable balance is $36,000 that means Evergreen collected only $89,000 in cash.

ILLUSTRATION 22.6 Analysis of Accounts Receivable

Accounts Receivable

1/1/24 Balance	–0–	Receipts from customer	89,000
Revenues	125,000		
12/31/24 Balance	36,000		

As shown in Illustration 22.6, to adjust net income to net cash flow from operating activities, Evergreen must deduct the **increase** of $36,000 in accounts receivable from net income. When the Accounts Receivable balance **decreases**, cash receipts are higher than revenue recognized under the accrual basis. Therefore, the company adds to net income the amount of the decrease in accounts receivable to arrive at net cash provided by operating activities.

- **Increase in Accounts Payable—Indirect Method.** When accounts payable increase during the year, expenses on an accrual basis exceed those on a cash basis. Why? Because Evergreen incurred expenses, but some of the expenses are not yet paid. To convert net income to net cash flow from operating activities, Evergreen must add back the increase of $5,000 in accounts payable to net income.

As a result of the accounts receivable and accounts payable adjustments, Evergreen determines net cash flow from operating activities is $3,000 for the year 2024. **Illustration 22.7** shows this computation.

Net income		$34,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Increase in accounts receivable	$(36,000)	
Increase in accounts payable	5,000	(31,000)
Net cash provided by operating activities		$ 3,000

ILLUSTRATION 22.7 Computation of Net Cash Flow from Operating Activities, 2024—Indirect Method

Note that the term "net cash flow from operating activities" is a general phrase. In the statement of cash flows, the general phrase is replaced with either "net cash **provided by** operating activities" or "net cash **used by** operating activities." In Illustration 22.7, operations increased cash; therefore, Evergreen uses "net cash **provided** by operating activities."

Step 3: Determine Net Cash Flows from Investing and Financing Activities After Evergreen has computed the net cash provided by operating activities, the next step is to determine whether any other changes in balance sheet accounts caused an increase or decrease in cash.

For example, an examination of the remaining balance sheet accounts for Evergreen shows increases in both common stock and retained earnings. The common stock increase of $60,000 resulted from the issuance of common stock for cash. The issuance of common stock is reported in the statement of cash flows as a receipt of cash from a financing activity.

Two items caused the retained earnings increase of $20,000:

1. Net income of $34,000 increased retained earnings.
2. Declaration of $14,000 of dividends decreased retained earnings. The additional data indicated that the dividends were declared **and** paid.

Illustration 22.8 provides an analysis of the Retained Earnings account. The company reports the dividend payment as a cash outflow in the financing activities section.

Retained Earnings

1/1/24 Balance	0	Net income	34,000
Dividends declared	14,000		
		12/31/24 Balance	20,000

ILLUSTRATION 22.8 Analysis of Retained Earnings

Note that if the dividend had been declared but not paid in 2024, it would not be included as a cash outflow.

Statement of Cash Flows—2024 We are now ready to prepare the statement of cash flows. The statement starts with the operating activities section. Evergreen uses the indirect method to report net cash flow from operating activities. **Illustration 22.9** shows the statement of cash flows for Evergreen Inc., for 2024.

ILLUSTRATION 22.9 Statement of Cash Flows, Evergreen Inc., 2024

Evergreen Inc.
Statement of Cash Flows
For the Year Ended December 31, 2024

Cash flows from operating activities		
Net income		$34,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Increase in accounts receivable	$(36,000)	
Increase in accounts payable	5,000	(31,000)
Net cash provided by operating activities		3,000
Cash flows from financing activities		
Issuance of common stock	60,000	
Payment of cash dividends	(14,000)	
Net cash provided by financing activities		46,000
Net increase in cash		49,000
Cash, January 1, 2024		–0–
Cash, December 31, 2024		$49,000

The $60,000 increase in common stock results in a financing activity cash inflow. The payment of $14,000 in cash dividends is a financing activity outflow of cash. The $49,000 increase in cash reported in the statement of cash flows agrees with the increase of $49,000 shown in the comparative balance sheets as the change in the Cash account.

Accounting Matters — Cash Flow Management?

We know investors value transparent, high-quality reporting, especially as it relates to earnings. While accrual-basis net income is subject to estimates, and therefore potential earnings management, the statement of cash flows simply explains the change in actual cash held by the company throughout the reporting period. Does that mean that cash flow is **not** subject to potential manipulation by management? Not necessarily.

Investors look closely at operating cash flows and generally reward companies that generate cash from their ongoing operations rather than through borrowing, offering incentive for management to pump up cash flows from operations. For example, management can increase operating cash flows by slowing their payments to suppliers or by selling receivables to a third party. Looking at operating cash flows in conjunction with other financial metrics such as accounts receivable and accounts payable turnovers can offer more insight to investors about the quality of a company's cash flows.

Classification of cash flows is also important. Recently, the FASB updated its guidance in how companies report the securitization (sale) of receivables from a cash flow perspective. This change required companies to classify only some of the cash received in the sale of receivables as operating, while classifying other amounts related to the securitization as investing cash flow. This change alone knocked $2.3 billion off the operating cash flow of **Kraft Heinz**.

When evaluating the quality of a company's financial reporting, investors must keep an eye on the quality of earnings **and** cash flows.

Source: M. Rappaport, "Why Kraft-Heinz's Cash Flow Is Getting Sliced," *Wall Street Journal* (April 2, 2018).

Example 22.2—2025

Evergreen Inc. continued to grow and prosper in its second year of operations. The company purchased land, building, and office equipment, and revenues and net income increased substantially over the first year. **Illustrations 22.10** and **22.11** present information related to the second year of operations for Evergreen Inc.

Evergreen Inc.
Comparative Balance Sheets
As of December 31

	2025	2024	Change Increase/Decrease
Assets			
Cash	$ 37,000	$49,000	$ 12,000 Decrease
Accounts receivable	26,000	36,000	10,000 Decrease
Prepaid expenses	6,000	–0–	6,000 Increase
Land	70,000	–0–	70,000 Increase
Buildings	200,000	–0–	200,000 Increase
Accumulated depreciation—buildings	(11,000)	–0–	11,000 Increase
Equipment	68,000	–0–	68,000 Increase
Accumulated depreciation—equipment	(10,000)	–0–	10,000 Increase
Total	$386,000	$85,000	
Liabilities and Stockholders' Equity			
Accounts payable	$ 40,000	$ 5,000	$ 35,000 Increase
Bonds payable	150,000	–0–	150,000 Increase
Common stock ($1 par)	60,000	60,000	–0–
Retained earnings	136,000	20,000	116,000 Increase
Total	$386,000	$85,000	

ILLUSTRATION 22.10 Comparative Balance Sheets, Evergreen Inc., 2025

Evergreen Inc.
Income Statement
For the Year Ended December 31, 2025

Revenues		$492,000
Operating expenses (excluding depreciation)	$269,000	
Depreciation expense	21,000	290,000
Income from operations		202,000
Income tax expense		68,000
Net income		$134,000

Additional Information

(a) The company declared and paid an $18,000 cash dividend.

(b) The company obtained $150,000 cash through the issuance of long-term bonds.

(c) Land, building, and equipment were acquired for cash.

ILLUSTRATION 22.11 Income Statement, Evergreen Inc., 2025

Step 1: Determine the Change in Cash To prepare a statement of cash flows from the available information, the first step is to determine the change in cash. As shown in Illustration 22.10, cash decreased $12,000 ($49,000 − $37,000).

Step 2: Determine Net Cash Flow from Operating Activities—Indirect Method Using the indirect method, we adjust net income of $134,000 on an accrual basis to arrive at net cash flow from operating activities. Explanations for the adjustments to net income follow.

- **Decrease in Accounts Receivable.** Accounts receivable decreased during the period because cash receipts (cash-basis revenues) are higher than revenues reported on an accrual basis. To convert net income to net cash flow from operating activities, the decrease of $10,000 in accounts receivable must be added to net income.
- **Increase in Prepaid Expenses.** When prepaid expenses (assets) increase during a period, expenses on an accrual-basis income statement are lower than they are on a cash-basis income statement. The reason: Evergreen has made cash payments in the current period, but expenses (as charges to the income statement) have been deferred to future periods. To convert net income to net cash flow from operating activities, the company must deduct from net income the increase of $6,000 in prepaid expenses. An increase in prepaid expenses results in a decrease in cash during the period.

- **Increase in Accounts Payable.** Like the increase in 2024, Evergreen must add the 2025 increase of $35,000 in accounts payable to net income to convert to net cash flow from operating activities. The company incurred a greater amount of expense than the amount of cash it disbursed.
- **Depreciation Expense (Increase in Accumulated Depreciation).** The purchase of depreciable assets is a use of cash, shown in the investing section in the year of acquisition. Evergreen's depreciation expense of $21,000 (also represented by the increase in accumulated depreciation) is a noncash charge. The company adds it back to net income to arrive at net cash flow from operating activities. The $21,000 is the sum of the $11,000 depreciation on the building plus the $10,000 depreciation on the equipment.

Certain other periodic charges to expense do not require the use of cash. Examples are the amortization of intangible assets and depletion expense. Such charges are treated in the same manner as depreciation. Companies frequently list depreciation and similar noncash charges as the first adjustments to net income in the statement of cash flows.

As a result of these items, net cash provided by operating activities is $194,000, as shown in Illustration 22.12.

ILLUSTRATION 22.12
Computation of Net Cash Flow from Operating Activities, 2025—Indirect Method

Net income		$134,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$21,000	
Decrease in accounts receivable	10,000	
Increase in prepaid expenses	(6,000)	
Increase in accounts payable	35,000	60,000
Net cash provided by operating activities		$194,000

Step 3: Determine Net Cash Flows from Investing and Financing Activities

After you have determined the items affecting net cash provided by operating activities, the next step involves analyzing the remaining changes in balance sheet accounts. Evergreen Inc. analyzed the following accounts.

- **Increase in Land.** The company purchased land of $70,000 during the period. This transaction is an investing activity, reported as a use of cash or a cash outflow.
- **Increase in Buildings and Related Accumulated Depreciation.** As indicated in the additional data and from the change in the Buildings account, Evergreen acquired an office building using $200,000 cash. This transaction is a cash outflow, reported in the investing section. The $11,000 increase in accumulated depreciation results from recording depreciation expense on the building. As indicated earlier, the reported depreciation expense has no effect on the amount of cash.
- **Increase in Equipment and Related Accumulated Depreciation.** An increase in equipment of $68,000 resulted because the company used cash to purchase equipment. This transaction is an outflow of cash from an investing activity. The depreciation expense entry for the period explains the increase in Accumulated Depreciation—Equipment.
- **Increase in Bonds Payable.** The Bonds Payable account increased $150,000. Cash received from the issuance of these bonds represents an inflow of cash from a financing activity.
- **Increase in Retained Earnings.** Retained earnings increased $116,000 during the year. Two factors explain this increase. (1) Net income of $134,000 increased retained earnings, and (2) dividends of $18,000 decreased retained earnings. Payment of the dividends is a financing activity that involves a cash outflow.

Statement of Cash Flows—2025 Combining these items, we get the statement of cash flows for 2025 for Evergreen Inc., shown in Illustration 22.13, using the indirect method to compute net cash flow from operating activities.

ILLUSTRATION 22.13 Statement of Cash Flows, Evergreen Inc., 2025

Evergreen Inc.
Statement of Cash Flows
For the Year Ended December 31, 2025

Cash flows from operating activities		
Net income		$134,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 21,000	
Decrease in accounts receivable	10,000	
Increase in prepaid expenses	(6,000)	
Increase in accounts payable	35,000	60,000
Net cash provided by operating activities		194,000
Cash flows from investing activities		
Purchase of land	(70,000)	
Purchase of building	(200,000)	
Purchase of equipment	(68,000)	
Net cash used by investing activities		(338,000)
Cash flows from financing activities		
Issuance of bonds	150,000	
Payment of cash dividends	(18,000)	
Net cash provided by financing activities		132,000
Net decrease in cash		(12,000)
Cash, January 1, 2025		49,000
Cash, December 31, 2025		$ 37,000

Example 22.3—2026

Our third example, covering the 2026 operations of Evergreen Inc., is more complex. It again uses the indirect method to compute and present net cash flow from operating activities.

Evergreen Inc. experienced continued success in 2026 and expanded its operations to include the sale of proprietary software that helps companies with their sustainability reporting. Therefore, inventory is a new asset appearing in the company's December 31, 2026, balance sheet. **Illustrations 22.14** and **22.15** show the comparative balance sheets, income statements, and selected data for 2026.

ILLUSTRATION 22.14 Comparative Balance Sheets, Evergreen Inc., 2026

Evergreen Inc.
Comparative Balance Sheets
As of December 31

	2026	2025	Change Increase/Decrease
Assets			
Cash	$ 54,000	$ 37,000	$17,000 Increase
Accounts receivable	68,000	26,000	42,000 Increase
Inventory	54,000	–0–	54,000 Increase
Prepaid expenses	4,000	6,000	2,000 Decrease
Land	45,000	70,000	25,000 Decrease
Buildings	200,000	200,000	–0–
Accumulated depreciation—buildings	(21,000)	(11,000)	10,000 Increase
Equipment	193,000	68,000	125,000 Increase
Accumulated depreciation—equipment	(28,000)	(10,000)	18,000 Increase
Total	$569,000	$386,000	
Liabilities and Stockholders' Equity			
Accounts payable	$ 33,000	$ 40,000	$ 7,000 Decrease
Bonds payable	110,000	150,000	40,000 Decrease
Common stock ($1 par)	220,000	60,000	160,000 Increase
Retained earnings	206,000	136,000	70,000 Increase
Total	$569,000	$386,000	

ILLUSTRATION 22.15 Income Statement, Evergreen Inc., 2026

Evergreen Inc.
Income Statement
For the Year Ended December 31, 2026

Revenues		$890,000
Cost of goods sold	$465,000	
Operating expenses	221,000	
Interest expense	12,000	
Loss on sale of equipment	2,000	700,000
Income from operations		190,000
Income tax expense		65,000
Net income		$125,000

Additional Information

(a) Operating expenses include depreciation expense of $33,000 and expiration of prepaid expenses of $2,000.
(b) Land was sold at its book value for cash.
(c) Cash dividends of $55,000 were declared and paid.
(d) Interest expense of $12,000 was paid in cash.
(e) Equipment with a cost of $166,000 was purchased for cash. Equipment with a cost of $41,000 and a book value of $36,000 was sold for $34,000 cash.
(f) Bonds were redeemed at their book value for cash.
(g) Common stock ($1 par) was issued for cash.

Step 1: Determine the Change in Cash The first step in the preparation of the statement of cash flows is to determine the change in cash. As the comparative balance sheets show, cash increased $17,000 in 2026.

Step 2: Determine Net Cash Flow from Operating Activities—Indirect Method The adjustments to net income of $125,000 are as follows.

- **Increase in Accounts Receivable.** The increase in accounts receivable of $42,000 represents recorded accrual-basis revenues in excess of cash collections in 2026. The company deducts this increase from net income to convert from the accrual basis to the cash basis.
- **Increase in Inventory.** The $54,000 increase in inventory represents an operating use of cash, not an expense. Evergreen therefore deducts this amount from net income to arrive at net cash flow from operations. In other words, when inventory purchased exceeds inventory sold during a period, cost of goods sold on an accrual basis is lower than on a cash basis.
- **Decrease in Prepaid Expenses.** The $2,000 decrease in prepaid expenses represents an expense on the income statement for which Evergreen made no cash payment in the current period. The company adds back the decrease to net income, to arrive at net cash flow from operating activities.
- **Decrease in Accounts Payable.** When accounts payable decrease during the year, cost of goods sold and expenses on a cash basis are higher than they are on an accrual basis. To convert net income to net cash flow from operating activities, the company must deduct the $7,000 decrease in accounts payable from net income.
- **Depreciation Expense (Increase in Accumulated Depreciation).** Accumulated Depreciation—Buildings increased $10,000 ($21,000 − $11,000). The Buildings account did not change during the period, which means that Evergreen recorded depreciation expense of $10,000 in 2026.

Accumulated Depreciation—Equipment increased by $18,000 ($28,000 − $10,000) during the year. Two items caused the change: (1) sale of equipment and (2) recognition of depreciation expense. The additional information stated the sold equipment had an original cost of $41,000 and a book value of $36,000. The $5,000 difference between the cost and book value is the amount of depreciation previously recorded for the equipment sold. Since the equipment is being sold, Accumulated Depreciation—Equipment decreases by $5,000. It is determined that depreciation for the year was $23,000, as shown in the adjacent T-account. The company reconciled Accumulated Depreciation—Equipment as follows.

Beginning balance	$10,000
Add: Depreciation for 2026	23,000
	33,000
Deduct: Sale of equipment	5,000
Ending balance	$28,000

Accumulated Depreciation—Equipment

	1/1/26	10,000
	Depr.	23,000
Sale 5,000		
	12/31/26 Bal.	28,000

The company must add back to net income the total depreciation of $33,000 ($10,000 + $23,000) charged to the income statement, to determine net cash flow from operating activities.

- **Loss on Sale of Equipment.** Evergreen Inc. sold for $34,000 equipment that cost $41,000 and had a book value of $36,000. As a result, the company reported a loss of $2,000 ($34,000 cash − $36,000 book value) on its sale. To arrive at net cash flow from operating activities, it must add back to net income the loss on the sale of the equipment. The reason is that the loss is a noncash charge to the income statement. The loss did not reduce cash, but it did reduce net income.[4]

From these items, the company prepares the operating activities section of the statement of cash flows, as shown in **Illustration 22.16**.

Cash flows from operating activities		
Net income		$125,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 33,000	
Loss on sale of equipment	2,000	
Increase in accounts receivable	(42,000)	
Increase in inventory	(54,000)	
Decrease in prepaid expenses	2,000	
Decrease in accounts payable	(7,000)	(66,000)
Net cash provided by operating activities		$ 59,000

ILLUSTRATION 22.16 Operating Activities Section of Cash Flow Statement

Step 3: Determine Net Cash Flows from Investing and Financing Activities

By analyzing the remaining changes in the balance sheet accounts, Evergreen identifies cash flows from investing and financing activities.

- **Land.** Land decreased $25,000 during the period. As indicated from the additional information, the company sold land for cash at its book value. This transaction is an investing activity, reported as a $25,000 inflow of cash.

[4]A similar adjustment is required for unrealized gains or losses recorded on trading debt investments, equity investments, or other financial assets and liabilities accounted for under the fair value option. Marking these assets and liabilities to fair value results in an increase or decrease in income, but there is no effect on cash flows.

Equipment			
1/1/26	68,000		
Purch.	166,000		
		Sale	41,000
		12/31/26	193,000

- **Equipment.** An analysis of the Equipment account indicates the following.

Beginning balance	$ 68,000
Purchase of equipment	166,000
	234,000
Deduct: Sale of equipment	41,000
Ending balance	$193,000

The company used cash to purchase equipment with a fair value of $166,000—an investing transaction reported as a cash outflow. When equipment is sold, the Equipment account is credited for the original cost of the equipment. But remember, in the statement of cash flows, the cash received from the sale is reported, **not** the original cost or the book value. Evergreen reports the sale of the equipment for $34,000 cash as an investing activity that generates a cash inflow.

- **Bonds Payable.** Bonds payable decreased $40,000 during the year. As indicated from the additional information, the company redeemed the bonds at their book value. This financing transaction used $40,000 of cash.
- **Common Stock.** The Common Stock account increased $160,000 during the year. As indicated from the additional information, Evergreen issued common stock of $160,000 at par. This financing transaction provided cash of $160,000.
- **Retained Earnings.** Retained earnings changed $70,000 ($206,000 - $136,000) during the year. The $70,000 change in retained earnings results from net income of $125,000 from operations and the financing activity of paying cash dividends of $55,000.

Statement of Cash Flows—2026 Evergreen Inc. combines these items to prepare the statement of cash flows shown in Illustration 22.17.

ILLUSTRATION 22.17 Statement of Cash Flows, Evergreen Inc., 2026

Evergreen Inc.
Statement of Cash Flows
For the Year Ended December 31, 2026

Cash flows from operating activities		
Net income		$125,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 33,000	
Loss on sale of equipment	2,000	
Increase in accounts receivable	(42,000)	
Increase in inventory	(54,000)	
Decrease in prepaid expenses	2,000	
Decrease in accounts payable	(7,000)	(66,000)
Net cash provided by operating activities		59,000
Cash flows from investing activities		
Sale of land	25,000	
Sale of equipment	34,000	
Purchase of equipment	(166,000)	
Net cash used by investing activities		(107,000)
Cash flows from financing activities		
Redemption of bonds	(40,000)	
Sale of common stock	160,000	
Payment of dividends	(55,000)	
Net cash provided by financing activities		65,000
Net increase in cash		17,000
Cash, January 1, 2026		37,000
Cash, December 31, 2026		$ 54,000

Sources of Information for the Statement of Cash Flows

Listed here are important points to remember in the preparation of the statement of cash flows.

1. **Comparative balance sheets provide the basic information from which to prepare the report.** Additional information obtained from analyses of specific accounts is also included.
2. **An analysis of the Retained Earnings account is necessary.** The net increase or decrease in Retained Earnings without any explanation is a meaningless amount in the statement. Without explanation, it might represent the effect of net income, dividends declared, or prior period adjustments.
3. **The statement includes all changes that have passed through cash or have resulted in an increase or decrease in cash.**
4. **Write-downs, amortization charges, and similar "book" entries, such as depreciation of plant assets, represent neither inflows nor outflows of cash because they have no effect on cash.** To the extent that they have entered into the determination of net income, however, the company must add them back to or subtract them from net income, to arrive at net cash provided (used) by operating activities.

Indirect Method—Additional Adjustments

For consistency and comparability and because it is the most widely used method in practice, we used the indirect method in the Evergreen' examples. We determined net cash flow from operating activities by adding back to or deducting from net income those items that had no effect on cash. Illustration 22.18 presents a more complete set of common adjustments that companies make to net income to arrive at net cash flow from operating activities.

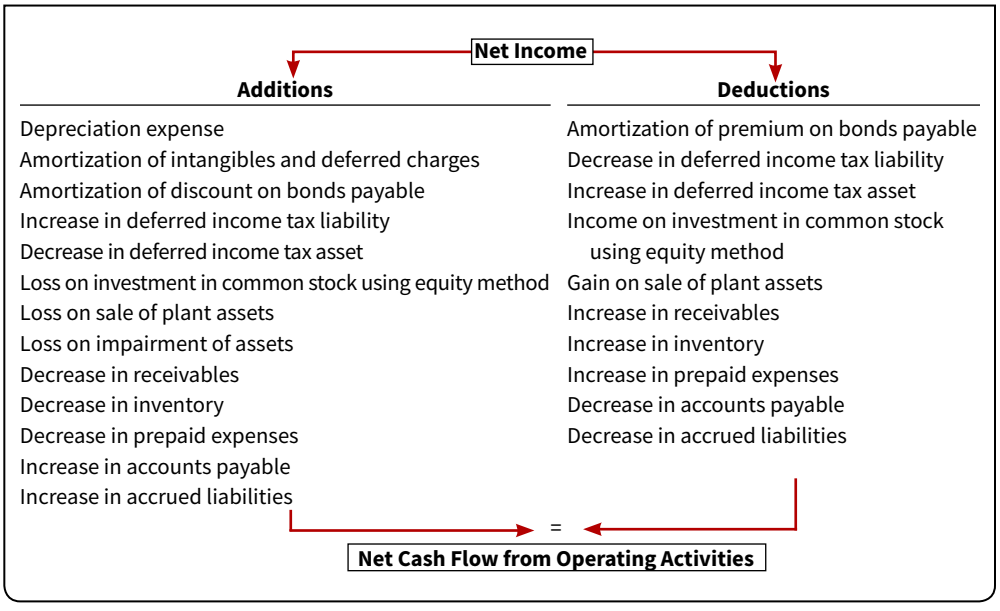

Net Income
Additions
Depreciation expense
Amortization of intangibles and deferred charges
Amortization of discount on bonds payable
Increase in deferred income tax liability
Decrease in deferred income tax asset
Loss on investment in common stock using equity method
Loss on sale of plant assets
Loss on impairment of assets
Decrease in receivables
Decrease in inventory
Decrease in prepaid expenses
Increase in accounts payable
Increase in accrued liabilities
Deductions
Amortization of premium on bonds payable
Decrease in deferred income tax liability
Increase in deferred income tax asset
Income on investment in common stock using equity method
Gain on sale of plant assets
Increase in receivables
Increase in inventory
Increase in prepaid expenses
Decrease in accounts payable
Decrease in accrued liabilities
=
Net Cash Flow from Operating Activities

ILLUSTRATION 22.18
Adjustments Needed to Determine Net Cash Flow from Operating Activities—Indirect Method

The additions and deductions in Illustration 22.18 reconcile net income to net cash flow from operating activities, illustrating why the indirect method is also called the reconciliation method.

Put It into Practice LO 22.2

Prepare Statement of Cash Flows

FACTS The following data are from the records of Antonio Brasileiro Company.

	December 31, 2025	December 31, 2024
Cash	$ 15,000	$ 8,000
Current assets other than cash	85,000	60,000
Long-term investments	10,000	53,000
Plant assets	335,000	215,000
	$445,000	$336,000
Accumulated depreciation	$ 20,000	$ 40,000
Current liabilities	40,000	22,000
Bonds payable	75,000	–0–
Common stock	254,000	254,000
Retained earnings	56,000	20,000
	$445,000	$336,000

Additional information:

1. In 2025, the company sold for $34,000 available-for-sale debt investments carried at a cost of $43,000 on December 31, 2025. No unrealized gains or losses were recorded on this investment in 2025.
2. In 2025, the company sold for $8,000 plant assets that cost $50,000 and were 80% depreciated.
3. Net income as reported on the income statement for the year was $46,000.
4. The company paid dividends totaling $10,000.
5. Depreciation charged for the year was $20,000.

INSTRUCTIONS

Prepare a statement of cash flows for the year 2025 using the indirect method.

SOLUTION

Antonio Brasileiro Company
Statement of Cash Flows
For the Year Ended December 31, 2025
Indirect Method

Cash flows from operating activities		
Net income		$ 46,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 20,000	
Loss on sale of investments ($43,000 − $34,000)	9,000	
Loss on sale of plant assets ($10,000 − $8,000)	2,000	
Increase in current assets other than cash	(25,000)	
Increase in current liabilities	18,000	24,000
Net cash provided by operating activities		70,000
Cash flows from investing activities		
Sale of plant assets	8,000	
Sale of investments	34,000	
Purchase of plant assets*	(170,000)	
Net cash used by investing activities		(128,000)
Cash flows from financing activities		
Issuance of bonds payable	75,000	
Payment of dividends	(10,000)	
Net cash provided by financing activities		65,000
Net increase in cash		7,000
Cash balance, January 1, 2025		8,000
Cash balance, December 31, 2025		$ 15,000

*Supporting computation (purchase of plant assets):

Plant assets, December 31, 2025	$335,000
Less: Plant assets, December 31, 2024	215,000
Net change	120,000
Plant assets sold	50,000
Plant assets purchased	$170,000

22.3 Net Cash Flow from Operating Activities—Direct Method

LEARNING OBJECTIVE 3

Contrast the direct and indirect methods of calculating net cash flow from operating activities.

Two different methods are available to adjust income from operations on an accrual basis to net cash flow from operating activities. We showed the indirect method in the Evergreen examples in the prior sections.

The **direct method** reports cash receipts and cash disbursements from operating activities.

- The difference between these two amounts is the net cash flow from operating activities.
- In other words, the direct method deducts operating cash disbursements from operating cash receipts.
- The direct method results in the presentation of a condensed cash receipts and cash disbursements statement.

As indicated from the accrual-based 2024 income statement (see Illustration 22.4), Evergreen reported revenues of $125,000. However, because the company's accounts receivable increased during 2024 by $36,000, the company collected only $89,000 ($125,000 − $36,000) in cash from these revenues. Similarly, Evergreen reported operating expenses of $85,000. However, accounts payable increased during the period by $5,000. Assuming that these payables relate to operating expenses, cash operating expenses were $80,000 ($85,000 − $5,000). Because no taxes payable exist at the end of the year, the company must have paid $6,000 income tax expense for 2024 in cash during the year. Evergreen computes net cash flow from operating activities as shown in **Illustration 22.19**.

Cash collected from revenues	$89,000
Cash payments for expenses	80,000
Income before income taxes	9,000
Cash payments for income taxes	6,000
Net cash provided by operating activities	$ 3,000

ILLUSTRATION 22.19
Computation of Net Cash Flow from Operating Activities, 2024—Direct Method

"Net cash provided by operating activities" is the equivalent of cash basis net income. ("Net cash used by operating activities" is equivalent to cash basis net loss.)

The FASB encourages use of the direct method and permits use of the indirect method. Yet, if the direct method is used, the Board requires that companies provide in a separate schedule a reconciliation of net income to net cash flow from operating activities. **Therefore, under either method, companies must prepare and report information from the indirect (reconciliation) method.**

Implementing the Direct Method

Under the direct method, the statement of cash flows reports net cash flow from operating activities in two major classes:

1. **Cash receipts.** Examples include cash collected from customers and cash received from interest and dividends.

2. **Cash disbursements.** Examples include cash paid to suppliers for goods, to employees for services, to creditors for interest, and to government authorities for taxes.

Expanded Example of the Direct Method

We illustrate the direct method here in more detail to help you understand the difference between accrual-based income and net cash flow from operating activities. This example also illustrates the data needed to apply the direct method. WasteNot Recycling Company, which began business on January 1, 2025, has the selected balance sheet information shown in Illustration 22.20.

ILLUSTRATION 22.20 Balance Sheet Accounts, WasteNot Recycling Company

	December 31, 2025	January 1, 2025
Cash	$159,000	$–0–
Accounts receivable	15,000	–0–
Inventory	160,000	–0–
Prepaid expenses	8,000	–0–
Property, plant, and equipment (net)	90,000	–0–
Accounts payable	60,000	–0–
Accrued expenses payable	20,000	–0–

WasteNot's December 31, 2025, income statement and additional information are presented in Illustration 22.21.

ILLUSTRATION 22.21 Income Statement, WasteNot Recycling Company

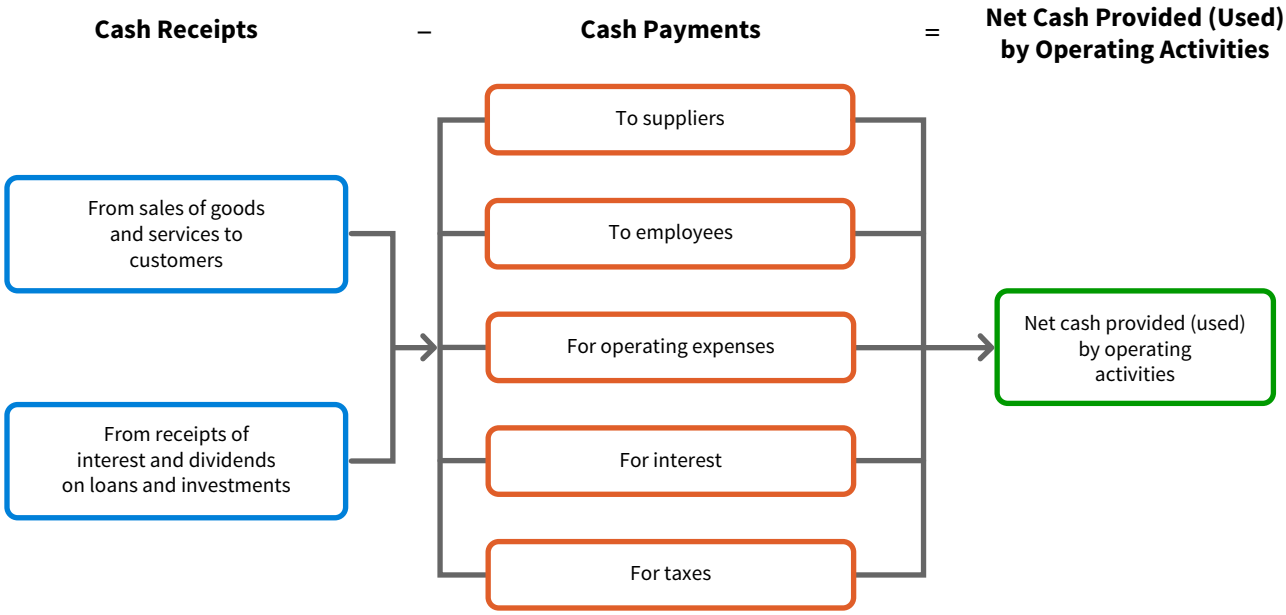
Sales revenue		$780,000
Cost of goods sold		450,000
Gross profit		330,000
Operating expenses	$160,000	
Depreciation	10,000	170,000
Income before income taxes		160,000
Income tax expense		48,000
Net income		$112,000

Additional Information

(a) Dividends of $70,000 were declared and paid in cash.
(b) The accounts payable increase resulted from the purchase of merchandise inventory.
(c) Prepaid expenses and accrued expenses payable relate to operating expenses.

Under the **direct method**, companies compute net cash provided by operating activities by **adjusting each item in the income statement** from the accrual basis to the cash basis. To simplify and condense the operating activities section, only major classes of operating cash receipts and cash payments are reported. As Illustration 22.22 shows, the difference between these major classes of cash receipts and cash payments is the net cash provided by operating activities.

ILLUSTRATION 22.22 Major Classes of Cash Receipts and Payments



An efficient way to apply the direct method is to analyze the revenues and expenses reported in the income statement in the order in which they are listed. The company then determines cash receipts and cash payments related to these revenues and expenses. In the following sections, we present the direct method adjustments for WasteNot in 2025, to determine net cash provided by operating activities.

Cash Receipts from Customers The income statement for WasteNot reported revenues from customers of $780,000. To determine cash receipts from customers, the company considers the change in accounts receivable during the year.

When accounts receivable increase during the year, revenues on an accrual basis are higher than cash receipts from customers. In other words, operations led to increased revenues, but not all of these revenues resulted in cash receipts. To determine the amount of increase in cash receipts, **deduct** the amount of the increase in accounts receivable from the total sales revenue. However, a decrease in accounts receivable is **added** to sales revenue because cash receipts from customers then exceed sales revenue.

For WasteNot, accounts receivable increased $15,000. Therefore, cash receipts from customers were $765,000, computed as follows.

Sales revenue	$780,000
Deduct: Increase in accounts receivable	15,000
Cash receipts from customers	$765,000

WasteNot could also determine cash receipts from customers by analyzing the following Accounts Receivable account.

Accounts Receivable

1/1/25 Balance	–0–	Receipts from customers	765,000
Sales revenue	780,000		
12/31/25 Balance	15,000		

The following formula captures the **relationships** between cash receipts from customers, sales revenue, and changes in accounts receivable.

Cash Receipts from Customers = Sales Revenue { + Decrease in Accounts Receivable or – Increase in Accounts Receivable

Cash Payments to Suppliers WasteNot reported cost of goods sold on its income statement of $450,000. To determine cash payments to suppliers, the company first finds purchases for the year, by adjusting cost of goods sold for the change in inventory. When inventory increases during the year, purchases this year exceed cost of goods sold. As a result, the company adds the increase in inventory to cost of goods sold, to arrive at purchases.

In 2025, WasteNot's inventory increased $160,000. The company computes purchases as follows.

Cost of goods sold	$450,000
Add: Increase in inventory	160,000
Purchases	$610,000

After computing purchases, WasteNot determines cash payments to suppliers by adjusting purchases for the change in accounts payable. When accounts payable increase during the year, purchases on an accrual basis are higher than they are on a cash basis. As a result, the company deducts from purchases the increase in accounts payable to arrive at cash payments to suppliers. Conversely, if cash payments to suppliers exceed purchases, WasteNot adds to purchases the decrease in accounts payable. Cash payments to suppliers were $550,000, computed as follows.

Purchases	$610,000
Deduct: Increase in accounts payable	60,000
Cash payments to suppliers	$550,000

WasteNot also can determine cash payments to suppliers by analyzing the following Accounts Payable account.

Accounts Payable

Payments to suppliers	550,000	1/1/25 Balance	–0–
		Purchases	610,000
		12/31/25 Balance	60,000

The following formula shows the relationships between cash payments to suppliers, cost of goods sold, changes in inventory, and changes in accounts payable.

Cash Payments to Suppliers = Cost of Goods Sold { + Increase in Inventory or – Decrease in Inventory } { + Decrease in Accounts Payable or – Increase in Accounts Payable }

Cash Payments for Operating Expenses WasteNot reported operating expenses of $160,000 on its income statement. To determine the cash paid for operating expenses, it must adjust this amount for any changes in prepaid expenses and accrued expenses payable.

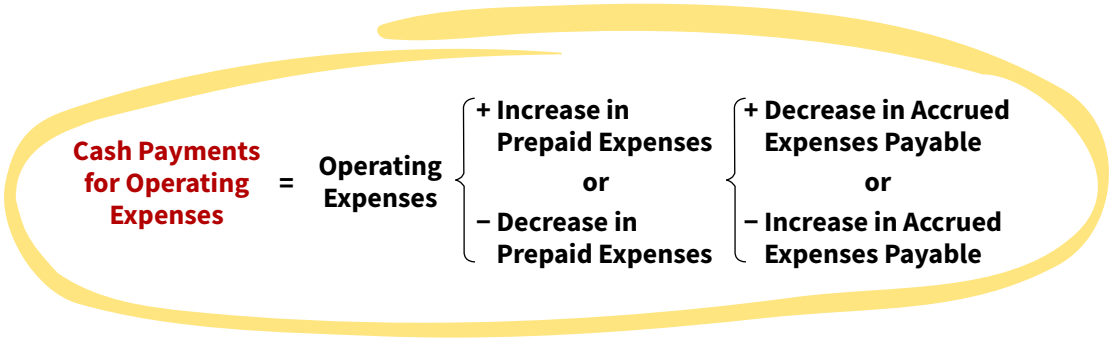
For example, when prepaid expenses increased $8,000 during the year, cash paid for operating expenses was $8,000 higher than operating expenses reported on the income statement. To convert operating expenses to cash payments for operating expenses, the company adds to operating expenses the increase of $8,000. However, if prepaid expenses decrease during the year, it deducts from operating expenses the amount of the decrease.

WasteNot also must adjust operating expenses for changes in accrued expenses payable. When accrued expenses payable increase during the year, operating expenses on an accrual basis are higher than they are on a cash basis. As a result, the company deducts from operating expenses an increase in accrued expenses payable, to arrive at cash payments for operating expenses. However, it adds to operating expenses a decrease in accrued expenses payable, because cash payments exceed operating expenses.

WasteNot's cash payments for operating expenses were $148,000, computed as follows.

Operating expenses	$160,000
Add: Increase in prepaid expenses	8,000
Deduct: Increase in accrued expenses payable	20,000
Cash payments for operating expenses	$148,000

The relationships among cash payments for operating expenses, changes in prepaid expenses, and changes in accrued expenses payable are shown in the following formula.



Note that the company did not consider depreciation expense because it is a noncash charge.

Cash Payments for Income Taxes The income statement for WasteNot shows income tax expense of $48,000. This amount equals the cash paid. How do we know that? Because the comparative balance sheet indicated no income taxes payable (or deferred tax assets or liabilities) at either the beginning or end of the year.

Summary of Net Cash Flow from Operating Activities—Direct Method

The schedule presented in Illustration 22.23 summarizes the computations to determine net cash provided by operating activities.

Accrual Basis			Adjustment	Add (Subtract)	Cash Basis
Sales revenue	$780,000	−	Increase in accounts receivable	$(15,000)	$765,000
Cost of goods sold	450,000	+	Increase in inventory	160,000	
		−	Increase in accounts payable	(60,000)	550,000
Operating expenses	160,000	+	Increase in prepaid expenses	8,000	
		−	Increase in accrued expenses payable	(20,000)	148,000
Depreciation expense	10,000	−	Depreciation expense	(10,000)	−0−
Income tax expense	48,000				48,000
Total expenses	668,000				746,000
Net income	$112,000		Net cash provided by operating activities		$ 19,000

ILLUSTRATION 22.23 Accrual Basis to Cash Basis

Illustration 22.24 shows the presentation of the direct method for reporting net cash flow from operating activities for the WasteNot Recycling Company illustration.

ILLUSTRATION 22.24 Operating Activities Section—Direct Method, 2025

WasteNot Recycling Company
Statement of Cash Flows (partial)

Cash flows from operating activities		
Cash received from customers		$765,000
Cash payments:		
To suppliers	$550,000	
For operating expenses	148,000	
For income taxes	48,000	746,000
Net cash provided by operating activities		$ 19,000

If WasteNot uses the direct method to present the net cash flow from operating activities, it must provide in a separate schedule the reconciliation of net income to net cash provided by operating activities. The reconciliation assumes the identical form and content of the indirect method of presentation, as shown in **Illustration 22.25**.

ILLUSTRATION 22.25 Reconciliation of Net Income to Net Cash Provided by Operating Activities

WasteNot Recycling Company
Reconciliation

Net income		$112,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$ 10,000	
Increase in accounts receivable	(15,000)	
Increase in inventory	(160,000)	
Increase in prepaid expenses	(8,000)	
Increase in accounts payable	60,000	
Increase in accrued expenses payable	20,000	(93,000)
Net cash provided by operating activities		$ 19,000

When the direct method is used, the company may present this reconciliation at the bottom of the statement of cash flows or in a separate schedule.

Special Reporting Rules Applying to Direct and Indirect Methods

Companies that use the direct method are required, at a minimum, to report separately the following classes of operating cash receipts and payments:

Receipts

1. Cash collected from customers (including lessees, licensees, etc.).
2. Interest and dividends received.
3. Other operating cash receipts, if any.

Payments

1. Cash paid to employees and suppliers of goods or services (including suppliers of insurance, advertising, etc.).
2. Interest paid.
3. Income taxes paid.
4. Other operating cash payments, if any.

The FASB encourages companies to provide further breakdowns of operating cash receipts and payments that they consider meaningful.

Companies using the indirect method must disclose separately changes in inventory, receivables, and payables in order to reconcile net income to net cash flow from operating activities. If a company uses the indirect method, it can either report the reconciliation within the statement of cash flows or can provide it in a separate schedule, with the statement of cash flows reporting only the **net** cash flow from operating activities. [3] In addition, companies must disclose, elsewhere in the financial statements or in accompanying notes, interest paid and income taxes paid.

The FASB requires these separate and additional disclosures so that users may approximate the direct method. An acceptable alternative presentation of the indirect method is to report net cash flow from operating activities as a single line item in the statement of cash flows and to present the reconciliation details elsewhere in the financial statements.

Accounting Matters — Direct versus Indirect

As we discussed in Chapter 1, the primary objective of financial reporting is to provide information that allows users to predict the amounts, timing, and uncertainty of future cash flows. Such information is essential in helping investors and creditors in their capital allocation decisions. As you have learned in this chapter, the primary purpose of the statement of cash flows is to provide information about a company's cash receipts and cash payments during a period.

It certainly sounds like the direct method of reporting operating cash flows best achieves both the objectives of financial reporting overall and of the statement of cash flows. Such information is more revealing of a company's ability (1) to generate sufficient cash from operating activities to pay its debts, (2) to reinvest in its operations, and (3) to make distributions to its owners. [4] Indeed, a comprehensive review of academic research related to direct method cash flow presentation indicates that financial statement users prefer the direct method and that the direct method generally provides decision-useful information. That is, the direct method information is reflected in stock prices indicating that users appear to utilize this information when available.

So, why does the FASB allow companies to choose either the indirect or direct method in reporting cash from operations? In the past, when the FASB has considered **requiring** companies to report using the direct method, there has been significant push-back from companies, contending that it is less costly to use the indirect method. Additionally, many companies indicate they do not currently collect information in a manner that allows them to report cash flows using the direct method, nor are their accounting systems equipped to collect the necessary information.

While the vast majority of companies report their cash flows from operations using the indirect method, there are a small percentage of companies who choose the direct method, including **CVS Health**. Will others follow their lead? Only time will tell. For now, it appears financial statement users' desire for the direct method will still go unmet.

Source: J. Hales and S. Orpurt, "A Review of Academic Research on the Reporting of Cash Flows from Operations," *Accounting Horizons* (September 2013), pp. 539–578.

Put It into Practice LO 22.3

Determine Cash Flow from Operating Activities—Direct Method

FACTS Bordelon Company's income statement for the year ended December 31, 2025, contained the following condensed information:

Revenue from fees		$1,580,000
Operating expenses (excluding depreciation)	$1,256,000	
Depreciation expense	87,000	1,343,000
Income from operations		237,000
Gain on sale of equipment		6,000
Income before income taxes		243,000
Income tax expense		49,000
Net income		$ 194,000

Bordelon's balance sheet contained the following comparative data at December 31:

	2025	2024
Accounts receivable	$157,000	$107,000
Accounts payable	120,000	70,000
Income taxes payable	8,800	13,200

Accounts payable pertains to operating expenses.

INSTRUCTIONS

Prepare the operating activities section of the statement of cash flows using the direct method.

SOLUTION

Bordelon Company
Statement of Cash Flows (partial)
For the Year Ended December 31, 2025

Cash flows from operating activities		
Cash receipts from customers		$1,530,000[a]
Cash payments		
For operating expenses	$1,206,000[b]	
For income taxes	53,400[c]	1,259,400
Net cash provided by operating activities		$ 270,600
[a]Computation of cash receipts from customers:		
Revenue from fees	$1,580,000	
Less: Increase in accounts receivable ($157,000 − $107,000)	50,000	
Cash receipts from customers	$1,530,000	
[b]Computation of cash payments:		
Operating expenses	$1,256,000	
Less: Increase in accounts payable ($120,000 − $70,000)	50,000	
Cash payments for operating expenses	$1,206,000	
[c]Income tax expense	$49,000	
Add: Decrease in income taxes payable ($8,800 − $13,200)	4,400	
Cash payments for income taxes	$53,400	

22.4 Special Problems in Statement Preparation

LEARNING OBJECTIVE 4

Discuss special problems in preparing a statement of cash flows.

We discussed some of the special problems related to preparing the statement of cash flows in connection with the preceding illustrations. Other problems that arise with some frequency in the preparation of this statement include the following.

1. Adjustments to net income.
2. Accounts receivable (net).
3. Other working capital changes.
4. Net losses.
5. Significant noncash transactions.

Adjustments to Net Income

Depreciation and Amortization

Depreciation expense is the most common adjustment to net income that companies make to arrive at net cash flow from operating activities. But there are numerous other noncash expense or revenue items. Examples of expense items that companies must add back to net

income are the **amortization of limited-life intangible assets** such as patents and copyrights. These charges to expense involve expenditures made in prior periods that a company amortizes currently. These charges reduce net income without affecting cash in the current period.

Also, **amortization of bond discount or premium** on long-term bonds payable affects the amount of interest expense. However, neither affects cash. As a result, a company should **add back** discount amortization and **subtract** premium amortization from net income to arrive at net cash flow from operating activities.

Postretirement Benefit Costs

If a company has postretirement costs such as an employee pension plan, chances are that the pension expense recorded during a period will either be higher or lower than the cash funded. When the expense is higher or lower than the cash paid, **the company must adjust net income by the difference between cash paid and the expense reported** in computing net cash flow from operating activities.

Changes in Deferred Income Taxes

Changes in deferred income taxes affect net income but have no effect on cash. For example, **Delta Air Lines** reported an increase in its liability for deferred taxes of approximately $1.2 billion. This change in the liability increased tax expense and decreased net income, but did not affect cash. Therefore, Delta added back $1.2 billion to net income on its statement of cash flows.

Equity Method of Accounting

Another common adjustment to net income is **a change related to an investment in common stock** when recording income or loss under the equity method. Recall that under the equity method, the investor (1) debits the investment account and credits revenue for its share of the investee's net income, and (2) credits dividends received to the investment account. Therefore, the net increase in the investment account does not affect cash flow. A company must deduct the net increase from net income to arrive at net cash flow from operating activities.

Example 22.1
Equity Method Impact on Cash Flows

FACTS Victor Co. owns 40% of Milo Inc. During the year, Milo reports net income of $100,000 and pays a cash dividend of $30,000.

QUESTION How would Victor report the investment in Milo in the statement of cash flows?

SOLUTION

Using the equity method, Victor's share of Milo's earnings and dividends is as follows.

Milo's net income ($100,000 × .40)	$40,000 noncash revenue included in Victor's net income
Milo's cash dividend ($30,000 × .40)	12,000 cash dividend revenue included in Victor's net income
Difference	$28,000 net noncash revenue to be deducted from Victor's net income

Therefore, Victor would deduct $28,000 from its net income in the computation of net cash flows from operating activities.

Losses and Gains

Realized Losses and Gains In the Evergreen example presented earlier, the company experienced a loss of $2,000 from the sale of equipment. The company added this loss to net income to compute net cash flow from operating activities because **the loss is a noncash charge in the income statement**.

If Evergreen experiences a **gain** from a sale of equipment, it too requires an adjustment to net income. Because a company reports the gain in the statement of cash flows as part of the cash proceeds from the sale of equipment under investing activities, **it deducts the gain from net income to avoid double-counting**—once as part of net income and again as part of the cash proceeds from the sale.

Example 22.2 Reporting a Gain with the Indirect Method

FACTS Lynch Co. had land with a carrying value of $100,000 that it sold for $110,000, resulting in a gain of $10,000.

QUESTION How would Lynch report the sale of the land on the statement of cash flows?

SOLUTION

The $110,000 cash proceeds from the sale of land is reported as a cash inflow in the investing activities section of the statement of cash flows. The $10,000 gain would be included in Lynch's accrual basis net income. Since the gain is included in the total cash proceeds amount shown in the investing activities section, it should **not** be reported in the operating activities section. Therefore, the gain is deducted from net income to arrive at net cash flow from operating activities. This prevents the gain from being double-counted on the statement of cash flows.

Unrealized Losses and Gains Unrealized losses and gains often result for investments in debt and equity securities. Those that are included in net income must be adjusted to determine net cash flows from operating activities. Some unrealized losses and gains are reported as part of other comprehensive income. Since these unrealized gains and losses do not impact net income, no adjustments are needed.

Example 22.3 Treatment of Unrealized Gains and Losses with the Indirect Method

FACTS Assume that **Target** purchases the following three investments on January 10, 2025.

1. Debt investment for $1 million that is classified as trading. During 2025, the debt investment has an unrealized holding gain of $110,000 recorded in net income.
2. Debt investment for $600,000 that is classified as available-for-sale. During 2025, the available-for-sale debt investment has an unrealized holding loss of $50,000 recorded in other comprehensive income.
3. Equity investment for $200,000 in the stock of Groesch Company (the number of shares purchased represents less than 20% of Groesch common stock). During 2025, the Groesch investment has an unrealized holding gain of $15,000 recorded in net income.

QUESTION How would Target report each of these items on the statement of cash flows?

SOLUTION

1. The unrealized holding gain of $110,000 on the debt investment increases net income but does not increase net cash flow from operating activities. As a result, the unrealized holding gain of $110,000 is deducted from net income to compute net cash flow from operating activities.
2. The unrealized holding loss of $50,000 that Target incurs on the available-for-sale debt investment does not affect net income or cash flows—this loss is reported in the other comprehensive income section. As a result, no adjustment to net income is necessary in computing net cash flow from operating activities.
3. The unrealized holding gain of $15,000 on the equity investment increases net income but does not increase net cash flow from operating activities. As a result, the unrealized holding gain of $15,000 is deducted from net income to compute net cash flow from operating activities.

Stock Options

Recall for share-based compensation plans that companies are required to use the fair value method to determine total compensation cost. The compensation cost is then recognized as an expense in the periods in which the employee provides services. When Compensation Expense is debited, Paid-in Capital—Stock Options is often credited. Cash is not affected by recording the expense. **Therefore, the company must increase net income by the amount of compensation expense from stock options in computing net cash flow from operating activities.**

Example 22.4
Stock Compensation

FACTS First Wave Inc. grants 5,000 options to its CEO, Ann Johnson. Each option entitles Johnson to purchase one share of First Wave's $1 par value common stock at $50 per share at any time in the next 2 years. The fair value of the options is $200,000. Net income for First Wave this year is $600,000, and the income tax rate is 20%.

QUESTIONS (a) What are the journal entries that First Wave would record in the first year of the stock options? (b) How would the stock options be reported on the statement of cash flows in the first year?

SOLUTION

a. First Wave records compensation expense in the first year as follows.

Compensation Expense ($200,000 ÷ 2)	100,000	
Paid-in Capital—Stock Options		100,000

In addition, First Wave would recognize a deferred tax asset of $20,000 ($100,000 × .20) in the first year as follows.

Deferred Tax Asset	20,000	
Income Tax Expense		20,000

b. On the statement of cash flows for the first year, First Wave reports the following.

Net income	$600,000
Adjustments to reconcile net income to net cash provided by operating activities:	
Share-based compensation expense	100,000
Increase in deferred tax asset	(20,000)

First Wave adds the share-based compensation expense to net income because it is a noncash expense. The increase in the deferred tax asset and the related reduction in income tax expense increase net income. Although the negative income tax expense increases net income, it does not increase cash. Therefore, it should be deducted.

Subsequently, if Ann Johnson exercises her options, First Wave reports "Cash provided by exercise of stock options" in the financing section of the statement of cash flows.[5]

Unusual and Infrequent Items

Companies should report **either as investing activities or as financing activities** cash flows from unusual and infrequent transactions and other events whose effects are included in net income but which are **not** related to operations.

[5]Companies receive a tax deduction related to share-based compensation plans at the time employees exercise their options. The amount of the deduction is equal to the difference between the market price of the stock and the exercise price at the date the employee purchases the stock, which in most cases is much larger than the total compensation expense recorded. When the tax deduction exceeds the total compensation recorded, this provides an additional cash inflow to the company. For example, in a recent year **Cisco Systems** reported an additional cash inflow related to its stock-option plans equal to $537 million. Under current GAAP, this tax-related cash inflow is reported in the operating section of the statement of cash flows. **[5]**

Example 22.5
Unusual and Infrequent Items Reported in the Statement of Cash Flows

FACTS Evergreen had land with a carrying value of $200,000, which was condemned by the state of Maine for a highway project. The condemnation proceeds received were $205,000, resulting in a gain of $5,000 less $1,000 of taxes.

QUESTION How would Evergreen report the proceeds from the land condemnation in the statement of cash flows?

SOLUTION

The company would deduct the $5,000 gain from net income in the operating activities section. It would report the $205,000 cash inflow from the condemnation as an investing activity, as follows.

Cash flows from investing activities	
Condemnation of land	$205,000

Note that Evergreen handles the gain at its **gross** amount ($5,000), not net of tax. The company reports the cash received in the condemnation as an investing activity at $205,000, also exclusive of the tax effect.

Underlying Concepts

By rejecting the requirement to allocate taxes to the various activities, the FASB invoked the cost constraint. The information would be beneficial, but the cost of providing such information would exceed the benefits of providing it.

The FASB requires companies to classify **all income taxes paid as operating cash outflows**. Some suggested that income taxes paid be allocated to investing and financing transactions. But the Board decided that allocation of income taxes paid to operating, investing, and financing activities would be so complex and arbitrary that the benefits, if any, would not justify the costs involved (see **Underlying Concepts**). Under both the direct method and the indirect method, companies must disclose the total amount of income taxes paid.[6]

Accounts Receivable (Net)

Up to this point, we assumed no allowance for doubtful accounts—a contra account—to offset accounts receivable. However, if a company needs an allowance for doubtful accounts, how does that allowance affect the company's determination of net cash flow from operating activities? Assume that Redmark Co. reports net income of $40,000. It has the accounts receivable balances as shown in **Illustration 22.26**.

ILLUSTRATION 22.26 Accounts Receivable Balances, Redmark Co.

	2025	2024	Change Increase/Decrease
Accounts receivable	$105,000	$90,000	$15,000 Increase
Allowance for doubtful accounts	(10,000)	(4,000)	6,000 Increase
Accounts receivable (net)	$ 95,000	$86,000	9,000 Increase

Indirect Method

Because an increase in Allowance for Doubtful Accounts results from a charge to bad debt expense, a company should add back an increase in Allowance for Doubtful Accounts to net income to arrive at net cash flow from operating activities. **Illustration 22.27** shows one method for presenting this information in a statement of cash flows.

[6]See Hugo Nurnberg, "Inconsistencies and Ambiguities in Cash Flow Statements Under *FASB Statement No. 95*," *Accounting Horizons* (June 1993), pp. 60–73. Nurnberg identifies the inconsistencies caused by the three-way classification of all cash receipts and cash payments, gross versus net of tax, the ambiguous disclosure requirements for noncash investing and financing transactions, and the ambiguous presentation of third-party financing transactions. See also Paul B. W. Miller and Bruce P. Budge, "Nonarticulation in Cash Flow Statements and Implications for Education, Research, and Practice," *Accounting Horizons* (December 1996), pp. 1–15; and Charles Mulford and Michael Ely, "Calculating Sustainable Cash Flow: A Study of the S&P 100," *Georgia Tech Financial Analysis Lab* (October 2004).

Redmark Co.
Statement of Cash Flows (partial)
For the Year 2025

Cash flows from operating activities		
Net income		$40,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Increase in accounts receivable	$(15,000)	
Increase in allowance for doubtful accounts	6,000	(9,000)
		$31,000

ILLUSTRATION 22.27 Presentation of Allowance for Doubtful Accounts—Indirect Method

The increase in the Allowance for Doubtful Accounts balance results from a charge to bad debt expense for the year. Because bad debt expense is a noncash charge, a company must add it back to net income in arriving at net cash flow from operating activities.

Instead of separately analyzing the allowance account, a shortcut approach is to net the allowance balance against the receivable balance and compare the change in accounts receivable on a net basis. **Illustration 22.28** shows this presentation.

Redmark Co.
Statement of Cash Flows (partial)
For the Year 2025

Cash flows from operating activities	
Net income	$40,000
Adjustments to reconcile net income to net cash provided by operating activities:	
Increase in accounts receivable (net)	(9,000)
	$31,000

ILLUSTRATION 22.28 Net Approach to Allowance for Doubtful Accounts—Indirect Method

This shortcut procedure works also if the change in the allowance account results from a write-off of accounts receivable. This reduces both Accounts Receivable and Allowance for Doubtful Accounts. No effect on cash flows occurs. *Because of its simplicity, use the net approach for your homework assignments.*

Direct Method

If using the direct method, a company **should not net** Allowance for Doubtful Accounts against Accounts Receivable. To illustrate, assume that Redmark Co.'s net income of $40,000 consisted of the items shown in **Illustration 22.29**.

Redmark Co.
Income Statement
For the Year 2025

Sales revenue		$100,000
Expenses		
Salaries	$46,000	
Utilities	8,000	
Bad debts	6,000	60,000
Net income		$ 40,000

ILLUSTRATION 22.29 Income Statement, Redmark Co.

If Redmark deducts the $9,000 increase in accounts receivable (net) from sales for the year, it would report cash sales at $91,000 ($100,000 − $9,000) and cash payments for operating expenses at $60,000. Both items would be misstated: Cash sales should be reported at $85,000 ($100,000 − $15,000), and total cash payments for operating expenses should be reported at $54,000 ($60,000 − $6,000). **Illustration 22.30** shows the proper presentation.

ILLUSTRATION 22.30 Bad Debts—Direct Method

Redmark Co.
Statement of Cash Flows (partial)
For the Year 2025

Cash flows from operating activities		
Cash received from customers		$85,000
Salaries paid	$46,000	
Utilities paid	8,000	54,000
Net cash provided by operating activities		$31,000

An added complication develops when a company writes off accounts receivable. Simply adjusting sales for the change in accounts receivable will not provide the proper amount of cash sales. The reason is that the write-off of the accounts receivable is not a cash collection. Thus, an additional adjustment is necessary.

Accounting Matters — Cash During Challenging Times

All businesses face risk, which comes from many different sources, such as natural disasters, political change, evolving technologies, and fierce competition in an industry. Company management does its best to manage risk, but sometimes events happen that are truly unforeseen. It is therefore critical for companies to have available cash to weather challenging times.

For example, the aircraft and commercial airline industry faced tremendous challenges in 2019–2022. **Boeing**, the world's largest manufacturer of commercial jets, had its 737 MAX jet grounded in March 2019 after two crashes. Boeing then stopped production of the jets in January 2020. The inability to deliver new jets to the airline industry strained Boeing's liquidity and resulted in the company securing a $13.8 billion loan. Then, Covid-19 essentially shut down travel around the globe in 2020 and into 2021. Boeing's chief executives stated, "It's critical for any company to preserve cash in challenging periods." The company announced it would freeze hiring and nonessential travel, and place limits on employees earning overtime pay.

In early 2020, **Spirit Airlines** had quite an interesting situation with its cash flows. Spirit is a low-cost airline that offers flights in the United States, Caribbean, and Latin America. The company had to restate its statement of cash flows for the year ended December 31, 2019. Some "other liabilities" relating to property, plant, and equipment purchases had been misclassified as operating activities instead of investing activities. The following table shows a condensed, partial statement of cash flows before and after the restatement.

	Year Ended December 31,2019 (unaudited, in thousands)		
	(As amended)	(As previously filed)	Change
Operating Activities:			
Other liabilities	$ 1,698	$ (140,402)	$142,100
Net cash provided by operating activities	$ 551,321	$ 409,221	$142,100
Investing Activities:			
Purchase of property and equipment	$(334,537)	$ (192,437)	$(142,100)
Net cash used in investing activities	$(456,929)	$ (314,829)	$(142,100)

Luckily for Spirit, once the error was corrected, net cash provided by operating activities improved by almost 35%. This occurred just before the travel shutdown caused by Covid-19.

Sources: Doug Cameron, "Boeing Acts to Preserve Cash," *Wall Street Journal* (March 11, 2020); and J. Ciesielski, *The Weekly Reader*, Vol. 2, No. 12 (April 3, 2020).

Other Working Capital Changes

Working capital items include current assets and current liabilities. Up to this point, we showed how companies handled all the changes in working capital items as adjustments to net income in determining net cash flow from operating activities. You must be careful, however, because **some changes in working capital, although they affect cash, do not affect**

net income. Generally, these are investing or financing activities of a current nature. Illustration 22.31 provides three examples of working capital items that are reported as investing or financing activities.

ILLUSTRATION 22.31 Working Capital Items Reported as Investing or Financing Activities

Working Capital Item	Example	Reporting on Statement of Cash Flows
Short-term available-for-sale (AFS) debt securities (current asset)	Cash purchase of $50,000 of short-term AFS debt securities: • No impact on net income • Decreases cash by $50,000	Reported as a cash outflow of $50,000 in the investing activities section. [6]
Short-term nontrade note payable (current liability)	Issuance of a $10,000 short-term note payable for cash: • No impact on net income • Increases cash by $10,000	Reported as a cash inflow of $10,000 in the financing activities section.
Cash dividend payable (current liability)	Declaration of a $30,000 cash dividend: • No impact on net income • No impact on cash when declared	Not reported on the statement of cash flows because the dividend is declared but unpaid. (Note that once the dividend is paid in cash, it is reported as a cash outflow of $30,000 in the financing activities section.)

What about **trading debt securities, which are reported as current assets?** Because companies hold these investments principally for the purpose of selling them in the near term, companies should classify the cash flows from purchases and sales of trading securities as cash flows from **operating activities**.[7]

Net Losses

If a company reports a net loss instead of a net income, it must adjust the net loss for those items that do not result in a cash inflow or outflow. The net loss, after adjusting for the charges or credits not affecting cash, may result in a negative or a positive cash flow from operating activities.

Example 22.6
Net Loss with a Positive Cash Flow

FACTS Juarez Industries has a net loss of $50,000. The only adjustments for the operating activities section are depreciation expense of $55,000 and amortization of patents of $5,000.

QUESTION How would you present the operating activities section of the statement of cash flows for Juarez?

[7]The cash flows from trading short-term equity investments are classified based on management's intent for holding those investments. If the basis of the statement of cash flows is **cash and cash equivalents** and the short-term investment is considered a cash equivalent, then a company reports nothing in the statement because the transaction does not affect the balance of cash and cash equivalents. The Board notes that cash purchases of short-term investments generally are part of the company's cash management activities rather than part of its operating, investing, or financing activities. [7]

SOLUTION

After making adjustments for the noncash expense items, Juarez reports a positive cash flow from operations as follows:

Net loss		$(50,000)
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	$55,000	
Amortization of patents	5,000	60,000
Net cash provided by operating activities		$ 10,000

Example 22.7
Net Loss with a Negative Cash Flow

FACTS Juarez Industries has a net loss of $80,000. The only adjustment for the operating activities section is depreciation expense of $25,000.

QUESTION How would you present the operating activities section of the statement of cash flows for Juarez?

SOLUTION

After making the adjustment for the noncash expense item, Juarez reports a negative cash flow from operations as follows:

Net loss	$(80,000)
Adjustments to reconcile net income to net cash used by operating activities:	
Depreciation expense	25,000
Net cash used by operating activities	$(55,000)

Although not illustrated in this chapter, a negative cash flow may result even if the company reports a net income.

Significant Noncash Transactions

Because the statement of cash flows reports only the effects of operating, investing, and financing activities in terms of cash flows, it omits some **significant noncash transactions** and other events that are investing or financing activities. Among the more common of these noncash transactions that a company should report or disclose in some manner are the following.

1. Acquisition of assets by assuming liabilities (including capital lease obligations) or by issuing equity securities.
2. Exchanges of nonmonetary assets.
3. Refinancing of long-term debt.
4. Conversion of debt or preferred stock to common stock.
5. Issuance of equity securities to retire debt.

A company does not incorporate these noncash items in the statement of cash flows. If material in amount, these disclosures may be either narrative or summarized in a separate schedule at the bottom of the statement, or they may appear in a separate note or supplementary schedule to the financial statements.

Some noncash investing and financing activities are part cash and part noncash. Companies should report only the cash portion on the statement of cash flows. The noncash component should be reported at the bottom of the statement or in a separate note.[8]

Illustration 22.32 shows the presentation of these significant noncash transactions or other events in a separate schedule at the bottom of the statement of cash flows.

Net increase in cash	$3,717,000
Cash at beginning of year	5,208,000
Cash at end of year	$8,925,000
Noncash investing and financing activities	
Purchase of land and building through issuance of 250,000 shares of common stock	$1,750,000
Exchange of Steadfast, NY, land for Bedford, PA, land	$2,000,000
Conversion of 7% bonds to 50,000 shares of common stock	$500,000

ILLUSTRATION 22.32 Schedule Presentation of Noncash Investing and Financing Activities

Or, companies may present these noncash transactions in a separate note, as shown in **Illustration 22.33**.

Note G: Significant noncash transactions. During the year, the company engaged in the following significant noncash investing and financing transactions:

Issued 250,000 shares of common stock to purchase land and building	$1,750,000
Exchanged land in Steadfast, NY, for land in Bedford, PA	$2,000,000
Converted 7% bonds to 50,000 shares of common stock	$500,000

ILLUSTRATION 22.33 Note Presentation of Noncash Investing and Financing Activities

Companies do not generally report certain other significant noncash transactions or other events in conjunction with the statement of cash flows. Examples of these types of transactions are **stock dividends**, **stock splits**, **and restrictions on retained earnings**. Companies generally report these items, neither financing nor investing activities, in conjunction with the statement of stockholders' equity or schedules and notes pertaining to changes in capital accounts.

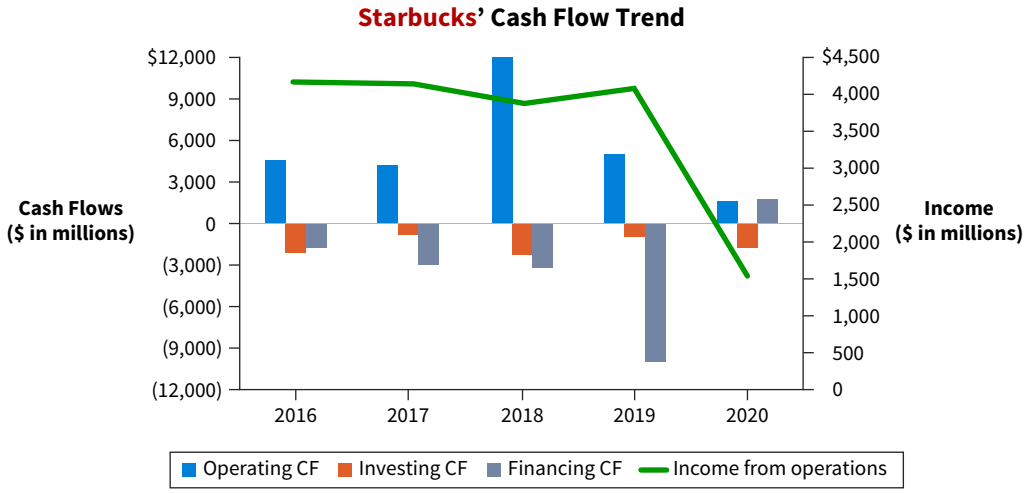
Analytics in Action: Cash Flow Analysis

We now know the important role the statement of cash flows has in evaluating the financial health of a company. We also know that we must consider the components of the statement of cash flows to truly understand how a company is generating and using their cash. But the statement of cash flows is just one piece of the puzzle.

Income statement items like net income and income from operations compared to operating cash flows can help users understand the role of estimates and accruals on a company's performance. Changes in working capital metrics like days receivable outstanding and inventory and payables turnover can help explain changes in cash flows. Most of this information is readily available in a company's financial reports, but using data analytics and visualizations can help highlight trends and exceptions we may not otherwise identify.

For example, consider the following graph, which shows some cash flow metrics from **Starbucks** over a five-year period.

[8] A study of significant noncash investing and financing activities found that the effects of these transactions—debt issued for capital assets and capital lease financing of capital assets—can have a significant effect on analysts' assessments of capital expenditures and free cash flow. Given the importance of noncash capital expenditures to calculations of free cash flow, the authors of this study encouraged the FASB to revise its stance regarding the exclusion of all noncash activities from the statement of cash flows. See C. Mulford and H. Nicholson, "Measuring the Effects of Non-Cash Investing and Financing Activities," *Journal of Applied Research in Accounting and Finance* (Vol. 9, No. 1, 2014), pp. 27–43.



Source: Starbucks 10-K annual reports.

By looking at this graph, we can quickly see a spike in 2018 operating cash flows. What does this mean? Why did operating cash flows drop again in 2019? Why didn't operating income increase as well? While the graph cannot explain what happened, it helps us frame our questions. In this case, a review of the company's 2018 10-K explains that operating cash flows increased due to the receipt of an upfront payment from **Nestlé** related to the Global Coffee Alliance.

Visualizations like those shown in this graph therefore may not give us all the answers we need. They do, however, allow us to efficiently review interrelated financial data to strengthen our understanding of a company's operating results and better predict future outcomes.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Put It into Practice LO 22.4

Address Special Problems in Preparing the Statement of Cash Flows

FACTS The following items must be considered in preparing a statement of cash flows for Clementi Company for the year ended December 31, 2025.

a. During the year, 9,000 shares of common stock with a par value of $10 a share were issued for $21 a share.

b. Uncollectible accounts receivable in the amount of $20,000 were written off against Allowance for Doubtful Accounts.

c. The company reported a net loss for the year of $40,000. Depreciation amounted to $15,000, and a gain of $7,000 was realized on the sale of available-for-sale (AFS) debt securities for $35,000 cash.

INSTRUCTIONS

State where each item is to be shown in the statement of cash flows, if at all, given that Clementi uses the indirect method for the operating activities section.

SOLUTION

a. Selling shares of common stock for cash is a financing activity. Therefore, $189,000 (9,000 shares × $21) is reported as a cash inflow from financing activities.

b. A write-off of accounts receivable does not affect cash; therefore, it is not shown on the statement of cash flows. (*Note:* The change in *net* accounts receivable is an adjustment to net income under the indirect method.)

c. These items are reported as follows.

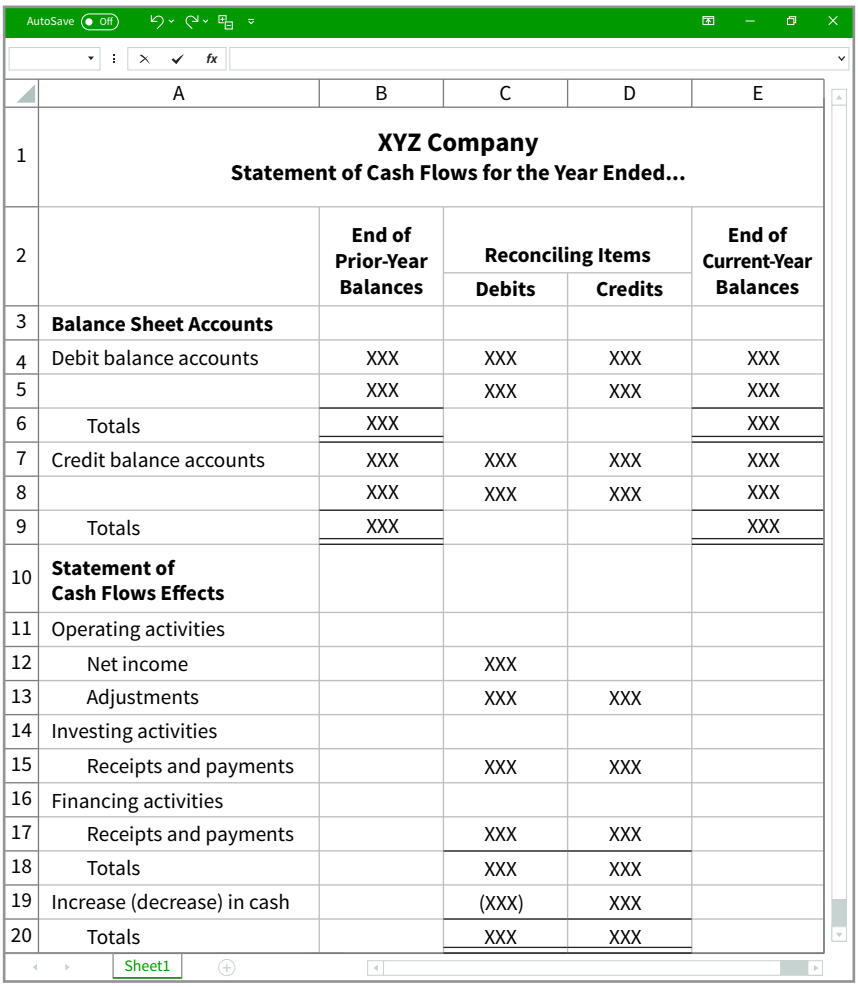
Cash flows from operating activities	
Net loss	$(40,000)
Adjustments to reconcile net loss to net cash provided (used) by operating activities:	
Depreciation expense	15,000
Gain on sale of AFS debt securities	(7,000)
Net cash used by operating activities	$(32,000)
Cash flows from investing activities	
Sale of AFS debt securities	$ 35,000

22.5 Use of a Worksheet

LEARNING OBJECTIVE 5

Explain the use of a worksheet in preparing a statement of cash flows.

When numerous adjustments are necessary or other complicating factors are present, companies often use **a worksheet to assemble and classify the data that will appear on the statement of cash flows**. The worksheet is merely a device that aids in the preparation of the statement. Its use is optional. **Illustration 22.34** shows the skeleton format of the worksheet for preparation of the statement of cash flows using the indirect method.



	A	B	C	D	E
1	**XYZ Company** **Statement of Cash Flows for the Year Ended...**				
2		**End of Prior-Year Balances**	**Reconciling Items**		**End of Current-Year Balances**
			Debits	**Credits**	
3	**Balance Sheet Accounts**				
4	Debit balance accounts	XXX	XXX	XXX	XXX
5		XXX	XXX	XXX	XXX
6	Totals	XXX			XXX
7	Credit balance accounts	XXX	XXX	XXX	XXX
8		XXX	XXX	XXX	XXX
9	Totals	XXX			XXX
10	**Statement of Cash Flows Effects**				
11	Operating activities				
12	Net income		XXX		
13	Adjustments		XXX	XXX	
14	Investing activities				
15	Receipts and payments		XXX	XXX	
16	Financing activities				
17	Receipts and payments		XXX	XXX	
18	Totals		XXX	XXX	
19	Increase (decrease) in cash		(XXX)	XXX	
20	Totals		XXX	XXX	

ILLUSTRATION 22.34 Format of Worksheet for Preparation of the Statement of Cash Flows

The following guidelines are important in using a worksheet.

1. In the balance sheet accounts section, **list accounts with debit balances separately from those with credit balances**. This means, for example, that Accumulated Depreciation is listed under credit balances and not as a contra account under debit balances. Enter the beginning and ending balances of each account in the appropriate columns.

Then, enter the transactions that caused the change in the account balance during the year as reconciling items in the two middle columns.

After all reconciling items have been entered, each line pertaining to a balance sheet account should foot across. That is, the beginning balance plus or minus the reconciling item(s) must equal the ending balance. When this agreement exists for all balance sheet accounts, all changes in account balances have been reconciled.

2. The bottom portion of the worksheet consists of the operating, investing, and financing activities sections. Accordingly, it provides the information necessary to prepare the formal statement of cash flows. **Enter inflows of cash as debits in the reconciling columns, and outflows of cash as credits in the reconciling columns.** Thus, in this section, a company would enter the sale of equipment for cash at book value as a debit under inflows of cash from investing activities. Similarly, it would enter the purchase of land for cash as a credit under outflows of cash from investing activities.
3. **Do not enter in any journal or post to any account the reconciling items shown in the worksheet.** These items do not represent either adjustments or corrections of the balance sheet accounts. They are used only to facilitate the preparation of the statement of cash flows.

Preparation of the Worksheet

The preparation of a worksheet involves the following steps.

1. Enter the balance sheet accounts and their beginning and ending balances in the balance sheet accounts section.
2. Enter the data that explain the changes in the balance sheet accounts (other than cash) and their effects on the statement of cash flows in the reconciling columns of the worksheet.
3. Enter the increase or decrease in cash on the cash line and at the bottom of the worksheet. This entry should enable the totals of the reconciling columns to be in agreement.

To illustrate the preparation and use of a worksheet and to illustrate the reporting of some of the special problems discussed in the prior section, we present a comprehensive example for Satellite Corporation. Again, the indirect method serves as the basis for the computation of net cash provided by operating activities. **Illustrations 22.35** and **22.36** present the balance sheet, combined statement of income and retained earnings, and additional information for Satellite Corporation.

ILLUSTRATIONS 22.35 Comparative Balance Sheet, Satellite Corporation

	A	B	C	D
1	**Satellite Corporation** **Comparative Balance Sheet** **December 31, 2025 and 2024**			
2		**2025**	**2024**	**Increase or (Decrease)**
3	**Assets**			
4	Cash	$ 59,000	$ 66,000	$ (7,000)
5	Accounts receivable (net)	104,000	51,000	53,000
6	Inventory	493,000	341,000	152,000
7	Prepaid expenses	16,500	17,000	(500)
8	Investment in Porter Co. (equity method)	18,500	15,000	3,500
9	Land	131,500	82,000	49,500
10	Equipment	187,000	142,000	45,000
11	Accumulated depreciation—equipment	(29,000)	(31,000)	(2,000)
12	Buildings	262,000	262,000	–
13	Accumulated depreciation—buildings	(74,100)	(71,000)	3,100
14	Trademarks	7,600	10,000	(2,400)
15	Total assets	$1,176,000	$884,000	
16	**Liabilities and Stockholders' Equity**			
17	Accounts payable	$ 132,000	$131,000	$ 1,000
18	Accrued liabilities	43,000	39,000	4,000
19	Income taxes payable	3,000	16,000	(13,000)
20	Notes payable (long-term)	60,000	–	60,000
21	Bonds payable	100,000	100,000	–
22	Premium on bonds payable	7,000	8,000	(1,000)
23	Deferred tax liability (long-term)	9,000	6,000	3,000
24	Total liabilities	354,000	300,000	
25	Common stock ($1 par)	60,000	50,000	10,000
26	Paid-in capital in excess of par—common stock	187,000	38,000	149,000
27	Retained earnings	592,000	496,000	96,000
28	Treasury stock	(17,000)	–	17,000
29	Total stockholders' equity	822,000	584,000	
30	Total liabilities and stockholders' equity	$1,176,000	$884,000	

Satellite Corporation
Combined Statement of Income and Retained Earnings
For the Year Ended December 31, 2025

Net sales		$526,500
Other revenue		3,500
Total revenues		530,000
Expense		
Cost of goods sold	$310,000	
Selling and administrative expenses	47,000	
Other expenses and losses	12,000	
Total expenses		369,000
Other gains and losses		
Gain on condemnation of land		8,000

ILLUSTRATIONS 22.36
Combined Income and Retained Earnings Statements, Satellite Corporation

ILLUSTRATION 22.36 (continued)

Income before income taxes		169,000
Income taxes		
Current	49,000	
Deferred	3,000	52,000
Net income		117,000
Retained earnings, January 1		496,000
Less:		
Cash dividends	6,000	
Stock dividend	15,000	21,000
Retained earnings, December 31		$592,000
Per share:		
Net income		$ 2.13

Additional Information

(a) Other revenue of $3,500 represents Satellite's equity share in the net income of Porter Co., an equity investee. Satellite owns 22% of Porter Co.

(b) An analysis of the equipment account and related accumulated depreciation indicates the following:

	Equipment Dr./(Cr.)	Accum. Dep. Dr./(Cr.)	Gain or (Loss)
Balance at end of 2024	$142,000	$(31,000)	
Purchases of equipment	53,000		
Sale of equipment	(8,000)	2,500	$(1,500)
Depreciation for the period		(11,500)	
Major repair charged to accumulated depreciation		11,000	
Balance at end of 2025	$187,000	$(29,000)	

(c) Land in the amount of $60,000 was purchased through the issuance of a long-term note; in addition, certain parcels of land costing $10,500 were condemned. The state government paid Satellite $18,500, resulting in an $8,000 gain.

(d) The change in the Accumulated Depreciation—Buildings, Trademarks, and Premium on Bonds Payable accounts resulted from depreciation and amortization entries.

(e) An analysis of the paid-in capital accounts in stockholders' equity discloses the following.

	Common Stock	Paid-in Capital in Excess of Par—Common Stock
Balance at end of 2024	$50,000	$ 38,000
Issuance of 2% stock dividend	1,000	14,000
Sale of stock for cash	9,000	135,000
Balance at end of 2025	$60,000	$187,000

(f) Interest paid (net of amount capitalized) is $9,000; income taxes paid is $49,000.

The discussion that follows provides additional explanations related to the preparation of the worksheet shown in **Illustration 22.37**.

ILLUSTRATION 22.37 Completed Worksheet for Preparation of Statement of Cash Flows, Satellite Corporation

	A	B	C	D	E	F	G
1	**Satellite Corporation Worksheet for Preparation of Statement of Cash Flows for the Year Ended December 31, 2025**						
2		**Balance 12/31/24**		**Reconciling Items—2025** Dr.		**Reconciling Items—2025** Cr.	**Balance 12/31/25**
3	**Debits**						
4	Cash	$ 66,000			(18)	$ 7,000	$ 59,000
5	Accounts receivable (net)	51,000	(4)	$ 53,000			104,000
6	Inventory	341,000	(5)	152,000			493,000
7	Prepaid expenses	17,000			(6)	500	16,500
8	Investment in Porter Co. (equity method)	15,000	(7)	3,500			18,500
9	Land	82,000	(8)	60,000	(9)	10,500	131,500
10	Equipment	142,000	(10)	53,000	(11)	8,000	187,000
11	Buildings	262,000					262,000
12	Trademarks	10,000			(14)	2,400	7,600
13	Treasury stock		(17)	17,000			17,000
14	Total debits	$986,000					$1,296,100
15	**Credits**						
16	Accum. depr.—equipment	$ 31,000	(11)	2,500	(12)	11,500	
17			(13)	11,000			$ 29,000
18	Accum. depr.—buildings	71,000			(14)	3,100	74,100
19	Accounts payable	131,000			(15)	1,000	132,000
20	Accrued liabilities	39,000			(15)	4,000	43,000
21	Income taxes payable	16,000	(15)	13,000			3,000
22	Notes payable	-0-			(8)	60,000	60,000
23	Bonds payable	100,000					100,000
24	Premium on bonds payable	8,000	(15)	1,000			7,000
25	Deferred tax liability	6,000			(15)	3,000	9,000
26	Common stock	50,000			(2)	1,000	
27					(16)	9,000	60,000
28	Paid-in capital in excess of	38,000			(2)	14,000	
29	par—common stock				(16)	135,000	187,000
30	Retained earnings	496,000	(2)	15,000	(1)	117,000	
31			(3)	6,000			592,000
32	Total credits	$986,000					$1,296,100
33	**Statement of Cash Flows Effects**						
34	Operating activities						
35	Net income		(1)	117,000			
36	Increase in accounts receivable (net)				(4)	53,000	
37	Increase in inventory				(5)	152,000	
38	Decrease in prepaid expenses		(6)	500			
39	Equity in earnings of Porter Co.				(7)	3,500	
40	Gain on condemnation of land				(9)	8,000	
41	Loss on sale of equipment		(11)	1,500			
42	Depr. expense—equipment		(12)	11,500			
43	Depr. expense—buildings		(14)	3,100			
44	Amortization of trademarks		(14)	2,400			
45	Increase in accounts payable		(15)	1,000			
46	Increase in accrued liabilities		(15)	4,000			
47	Increase in deferred tax liability		(15)	3,000			
48	Decrease in income taxes payable				(15)	13,000	
49	Amortization of bond premium				(15)	1,000	
50	Investing activities						
51	Proceeds from condemnation of land		(9)	18,500			
52	Purchase of equipment				(10)	53,000	
53	Sale of equipment		(11)	4,000			
54	Major repairs of equipment				(13)	11,000	
55	Financing activities						
56	Payment of cash dividend				(3)	6,000	
57	Issuance of common stock		(16)	144,000			
58	Purchase of treasury stock				(17)	17,000	
59	Totals			697,500		704,500	
60	Decrease in cash		(18)	7,000			
61	Totals			$704,500		$704,500	

Analysis of Transactions

The following discussion explains the individual adjustments that appear on the worksheet in Illustration 22.37. Because cash is the basis for the analysis, Satellite reconciles the Cash account last. Because income is the first item that appears on the statement of cash flows, it is handled first.

Change in Retained Earnings

Net income for the period is $117,000. The entry for it on the worksheet is as follows.

(1)

Operating—Net Income	117,000	
Retained Earnings		117,000

Satellite reports net income on the bottom section of the worksheet. This **is the starting point for preparation of the statement of cash flows (under the indirect method)**.

A stock dividend and a cash dividend also affected retained earnings. The retained earnings statement reports a stock dividend of $15,000. The worksheet entry for this transaction is as follows.

Retained Earnings

(2)	15,000	Bal.	496,000
(3)	6,000	**(1)**	117,000
		Bal.	592,000

(2)

Retained Earnings	15,000	
Common Stock		1,000
Paid-in Capital in Excess of Par—Common Stock		14,000

The issuance of stock dividends is not a cash operating, investing, or financing item. Therefore, **although the company enters this transaction on the worksheet for reconciling purposes, it does not report it in the statement of cash flows**.

The $6,000 cash dividend paid represents a financing activity cash outflow. Satellite makes the following worksheet entry:

(3)

Retained Earnings	6,000	
Financing—Cash Dividends		6,000

The company reconciles the beginning and ending balances of retained earnings by entry of the three items above.

Accounts Receivable (Net)

The increase in accounts receivable (net) of $53,000 represents adjustments that did not result in cash inflows during 2025. As a result, the company would deduct from net income the increase of $53,000. Satellite makes the following worksheet entry.

(4)

Accounts Receivable (net)	53,000	
Operating—Increase in Accounts Receivable (net)		53,000

Inventory

The increase in inventory of $152,000 represents an operating use of cash. The incremental investment in inventory during the year reduces cash without increasing the cost of goods sold. Satellite makes the following worksheet entry.

(5)

Inventory	152,000	
Operating—Increase in Inventory		152,000

Prepaid Expenses

The decrease in prepaid expenses of $500 represents a charge in the income statement for which there was no cash outflow in the current period. Satellite should add that amount back to net income through the following entry.

(6)

Operating—Decrease in Prepaid Expenses	500	
Prepaid Expenses		500

Investment in Stock

Satellite's investment in the stock of Porter Co. increased $3,500. This amount reflects Satellite's share of net income earned by Porter (its equity investee) during the current year. Although Satellite's revenue and therefore its net income increased $3,500 by recording Satellite's share of Porter Co.'s net income, no cash (dividend) was provided. Satellite makes the following worksheet entry.

(7)

Equity Investments (Porter Co.)	3,500	
Operating—Equity in Earnings of Porter Co.		3,500

Land

Satellite purchased land in the amount of $60,000 through the issuance of a long-term note payable. This transaction did not affect cash. It is a significant noncash investing/financing transaction that the company would disclose either in a separate schedule below the statement of cash flows or in the accompanying notes. Satellite makes the following entry to reconcile the worksheet.

(8)

Land	60,000	
Notes Payable		60,000

In addition to the noncash transaction involving the issuance of a note to purchase land, the Land account was decreased by the condemnation proceedings. The following worksheet entry records the receipt of $18,500 for land having a book value of $10,500.

(9)

Investing—Proceeds from Condemnation of Land	18,500	
Land		10,500
Operating—Gain on Condemnation of Land		8,000

In reconciling net income to net cash flow from operating activities, Satellite deducts from net income the gain of $8,000. The reason is that the transaction that gave rise to the gain is an item whose cash effect is already classified as an investing cash inflow. The Land account is now reconciled.

Land

Bal.	82,000	**(9)**	10,500
(8)	60,000		
Bal.	**131,500**		

Equipment and Accumulated Depreciation

An analysis of Equipment and Accumulated Depreciation—Equipment shows that a number of transactions have affected these accounts. The company purchased equipment in the amount of $53,000 during the year. Satellite records this transaction on the worksheet as follows.

(10)

Equipment	53,000	
Investing—Purchase of Equipment		53,000

In addition, Satellite sold at a loss of $1,500 equipment with a book value of $5,500. It records this transaction as follows.

(11)

Investing—Sale of Equipment	4,000	
Operating—Loss on Sale of Equipment	1,500	
Accumulated Depreciation—Equipment	2,500	
Equipment		8,000

The proceeds from the sale of the equipment provided cash of $4,000. In addition, the loss on the sale of the equipment has reduced net income but did not affect cash. Therefore, the company adds back to net income the amount of the loss, in order to accurately report cash provided by operating activities.

Satellite reported depreciation on the equipment at $11,500 and recorded it on the worksheet as follows.

(12)

Operating—Depreciation Expense—Equipment	11,500	
Accumulated Depreciation—Equipment		11,500

Equipment

Bal.	142,000	**(11)**	8,000
(10)	53,000		
Bal.	187,000		

Accumulated Depreciation—Equipment

(11)	2,500	Bal.	31,000
(13)	11,000	**(12)**	11,500
		Bal.	29,000

The company adds depreciation expense back to net income because that expense reduced income but did not affect cash.

Finally, the company made a major repair to the equipment. It charged this expenditure, in the amount of $11,000, to Accumulated Depreciation—Equipment. This expenditure required cash, and so Satellite makes the following worksheet entry.

(13)

Accumulated Depreciation—Equipment	11,000	
Investing—Major Repairs of Equipment		11,000

After adjusting for the foregoing items, Satellite has reconciled the balances in the Equipment and related Accumulated Depreciation—Equipment accounts.

Building Depreciation and Amortization of Trademarks

Depreciation expense on the buildings of $3,100 and amortization of trademarks of $2,400 are both expenses in the income statement that reduced net income but did not require cash outflows in the current period. Satellite makes the following worksheet entry.

(14)

Operating—Depreciation Expense—Buildings	3,100	
Operating—Amortization of Trademarks	2,400	
Accumulated Depreciation—Buildings		3,100
Trademarks		2,400

Other Noncash Charges or Credits

Analysis of the remaining accounts indicates that changes in the Accounts Payable, Accrued Liabilities, Income Taxes Payable, Premium on Bonds Payable, and Deferred Tax Liability balances resulted from charges or credits to net income that did not affect cash. The company should individually analyze each of these items and enter them in the worksheet. The following compound entry summarizes these noncash, income-related items.

(15)

Income Taxes Payable	13,000	
Premium on Bonds Payable	1,000	
Operating—Increase in Accounts Payable	1,000	
Operating—Increase in Accrued Liabilities	4,000	
Operating—Increase in Deferred Tax Liability	3,000	
Operating—Decrease in Income Taxes Payable		13,000
Operating—Amortization of Bond Premium		1,000
Accounts Payable		1,000
Accrued Liabilities		4,000
Deferred Tax Liability		3,000

Common Stock and Related Accounts

Comparison of the Common Stock balances and the Paid-in Capital in Excess of Par—Common Stock balances shows that transactions during the year affected these accounts. First, Satellite issues a stock dividend of 2% to stockholders. As the discussion of worksheet entry (2) indicated, no cash was provided or used by the stock dividend transaction. In addition to the shares issued via the stock dividend, Satellite sold shares of common stock at $16 per share. The company records this transaction as follows.

Common Stock

Bal.	50,000
(2)	1,000
(16)	9,000
Bal.	60,000

Paid-in Capital in Excess of Par—Common Stock

Bal.	38,000
(2)	14,000
(16)	135,000
Bal.	187,000

(16)

Financing—Sale of Common Stock	144,000	
Common Stock		9,000
Paid-in Capital in Excess of Par—Common Stock		135,000

Also, the company purchased shares of its common stock in the amount of $17,000. It records this transaction on the worksheet as follows.

(17)

Treasury Stock	17,000	
Financing—Purchase of Treasury Stock		17,000

Final Reconciling Entry

The final entry to reconcile the change in cash and to balance the worksheet is shown below. The $7,000 amount is the difference between the beginning and ending cash balance.

	(18)	
Decrease in Cash	7,000	
Cash		7,000

Once the company has determined that the differences between the beginning and ending balances per the worksheet columns have been accounted for, it can total the reconciling transactions columns, and they should balance. Satellite can prepare the statement of cash flows entirely from the items and amounts that appear at the bottom of the worksheet under "Statement of Cash Flows Effects."

Preparation of Final Statement

Illustration 22.38 presents a formal statement of cash flows prepared from the data compiled in the lower portion of the worksheet shown in Illustration 22.37.

ILLUSTRATION 22.38 Statement of Cash Flows, Satellite Corporation

Satellite Corporation
Statement of Cash Flows
For the Year Ended December 31, 2025

Cash flows from operating activities		
Net income		$117,000
Adjustments to reconcile net income to net cash used by operating activities:		
Depreciation expense	$ 14,600	
Amortization of trademarks	2,400	
Amortization of bond premium	(1,000)	
Equity in earnings of Porter Co.	(3,500)	
Gain on condemnation of land	(8,000)	
Loss on sale of equipment	1,500	
Increase in deferred tax liability	3,000	
Increase in accounts receivable (net)	(53,000)	
Increase in inventory	(152,000)	
Decrease in prepaid expenses	500	
Increase in accounts payable	1,000	
Increase in accrued liabilities	4,000	
Decrease in income taxes payable	(13,000)	(203,500)
Net cash used by operating activities		(86,500)
Cash flows from investing activities		
Proceeds from condemnation of land	18,500	
Purchase of equipment	(53,000)	
Sale of equipment	4,000	
Major repairs of equipment	(11,000)	
Net cash used by investing activities		(41,500)
Cash flows from financing activities		
Payment of cash dividend	(6,000)	
Issuance of common stock	144,000	
Purchase of treasury stock	(17,000)	
Net cash provided by financing activities		121,000
Net decrease in cash		(7,000)
Cash, January 1, 2025		66,000
Cash, December 31, 2025		$59,000

Supplemental Disclosures of Cash Flow Information:

Cash paid during the year for:	
Interest (net of amount capitalized)	$ 9,000
Income taxes	49,000

Supplemental Schedule of Noncash Investing and Financing Activities:
Purchase of land for $60,000 in exchange for a $60,000 long-term note.

Review and Practice

Key Terms Review

cash equivalents 22-3*(n)*
direct method 22-19
financing activities 22-3
indirect method 22-8
investing activities 22-3
operating activities 22-3
significant noncash transactions 22-34
statement of cash flows 22-2

Learning Objectives Review

1 Describe the usefulness and format of the statement of cash flows.

The primary purpose of the statement of cash flows is to provide information about cash receipts and cash payments of an entity during a period. A secondary objective is to report the entity's operating, investing, and financing activities during the period.

Companies classify cash flows as follows. (1) **Operating activities—transactions** that result in the revenues, expenses, gains, and losses that determine net income. (2) **Investing activities—lending** money and collecting on those loans, and acquiring and disposing of investments, plant assets, and intangible assets. (3) **Financing activities—obtaining** cash from creditors and repaying loans, issuing and reacquiring capital stock, and paying cash dividends.

2 Prepare a statement of cash flows.

(1) *Determine the change in cash*. This is the difference between the beginning and the ending cash balance shown on the comparative balance sheets. (2) *Determine the net cash flow from operating activities*. This procedure is complex; it involves analyzing not only the current year's income statement but also the comparative balance sheets and the selected transaction data. (3) *Determine cash flows from investing and financing activities*. Analyze all other changes in the balance sheet accounts to determine the effects on cash.

Companies must adjust net income on an accrual basis to determine net cash flow from operating activities because some expenses and losses do not cause cash outflows, and some revenues and gains do not provide cash inflows. Once a company has computed the net cash flow from operating activities, the next step is to determine whether any other changes in balance sheet accounts caused an increase or decrease in cash. Net cash flows from investing and financing activities can be determined primarily by examining the changes in noncurrent balance sheet accounts.

The information to prepare the statement usually comes from three sources. (1) *Comparative balance sheets*: Information in these statements indicates the amount of the changes in assets, liabilities, and equities during the period. (2) *Current income statement*: Information in this statement is used in determining the cash provided by operations during the period. (3) *Selected transaction data*: These data from the general ledger provide additional detailed information needed to determine how cash was provided or used during the period.

3 Contrast the direct and indirect methods of calculating net cash flow from operating activities.

Under the direct approach, companies calculate the major classes of operating cash receipts and cash disbursements. Companies summarize the computations in a schedule of changes from the accrual to the cash-basis income statement. Presentation of the direct approach of reporting net cash flow from operating activities takes the form of a condensed cash-basis income statement. The indirect method adds back to net income the noncash expenses and losses and subtracts the noncash revenues and gains.

4 Discuss special problems in preparing a statement of cash flows.

These special problems are (1) adjustments to income (depreciation and amortization, postretirement benefit costs, change in deferred income taxes, equity method of accounting, losses and gains, stock options, unusual and infrequent items); (2) accounts receivable (net); (3) other working capital changes; (4) net losses; and (5) significant noncash transactions.

5 Explain the use of a worksheet in preparing a statement of cash flows.

When numerous adjustments are necessary or other complicating factors are present, companies often use a worksheet to assemble and classify the data that will appear on the statement of cash flows. The worksheet is merely a device that aids in the preparation of the statement. Its use is optional.

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Questions

1. What is the purpose of the statement of cash flows? What information does it provide?

2. Of what use is the statement of cash flows?

3. Differentiate between investing activities, financing activities, and operating activities.

4. What are the major sources of cash (inflows) in a statement of cash flows? What are the major uses (outflows) of cash?

5. Identify and explain the major steps involved in preparing the statement of cash flows.

6. Identify the following items as (1) operating, (2) investing, or (3) financing activities: purchase of land, payment of dividends, cash sales, and purchase of treasury stock.

7. Unlike the other major financial statements, the statement of cash flows is not prepared from the adjusted trial balance. From what sources does the information to prepare this statement come, and what information does each source provide?

8. Why is it necessary to convert accrual-based net income to a cash basis when preparing a statement of cash flows?

9. Differentiate between the direct method and the indirect method by discussing each method.

10. Broussard Company reported net income of $3.5 million in 2025. Depreciation for the year was $520,000, accounts receivable increased $500,000, and accounts payable increased $300,000. Compute net cash flow from operating activities using the indirect method.

11. Collinsworth Co. reported sales on an accrual basis of $100,000. If accounts receivable increased $30,000 and the allowance for doubtful accounts increased $9,000 after a write-off of $2,000, compute cash sales.

12. Your roommate is puzzled. During the last year, the company in which she is a stockholder reported a net loss of $675,000, yet its cash increased $321,000 during the same period of time. Explain to your roommate how this situation could occur.

13. The board of directors of Tirico Corp. declared cash dividends of $260,000 during the current year. If dividends payable was $85,000 at the beginning of the year and $90,000 at the end of the year, how much cash was paid in dividends during the year?

14. Explain how the amount of cash payments to suppliers is computed under the direct method.

15. The net income for Fallon Company for 2025 was $320,000. During 2025, depreciation on plant assets was $124,000, amortization of patent was $40,000, and the company incurred a loss on sale of plant assets of $21,000. Compute net cash flow from operating activities.

16. Each of the following items must be considered in preparing a statement of cash flows for Blackwell Inc. for the year ended December 31, 2025. State where each item is to be shown in the statement, if at all.

- **a.** Plant assets that had cost $18,000 6½ years before and were being depreciated on a straight-line basis over 10 years with no estimated scrap value were sold for $4,000.
- **b.** During the year, 10,000 shares of common stock with a stated value of $20 a share were issued for $41 a share.
- **c.** Uncollectible accounts receivable in the amount of $22,000 were written off against Allowance for Doubtful Accounts.
- **d.** The company sustained a net loss for the year of $50,000. Depreciation amounted to $22,000, and a gain of $9,000 was realized on the sale of available-for-sale debt securities for $38,000 cash.

17. Classify the following items as (1) operating, (2) investing, (3) financing, or (4) significant noncash investing and financing activities, using the direct method.

- **a.** Cash payments to employees.
- **b.** Redemption of bonds payable.
- **c.** Sale of building at book value.
- **d.** Cash payments to suppliers.
- **e.** Exchange of equipment for furniture.
- **f.** Issuance of preferred stock.
- **g.** Cash received from customers.
- **h.** Purchase of treasury stock.
- **i.** Issuance of bonds for land.
- **j.** Payment of dividends.
- **k.** Purchase of equipment.
- **l.** Cash payments for operating expenses.

18. Stan Conner and Mark Stein were discussing the presentation format of the statement of cash flows of Bombeck Co. At the bottom of Bombeck's statement of cash flows was a separate section entitled "Noncash investing and financing activities." Give three examples of significant noncash transactions that would be reported in this section.

19. During 2025, Simms Company redeemed $2,000,000 of bonds payable for $1,880,000 cash. Indicate how this transaction would be reported on a statement of cash flows, if at all.

20. What are some of the arguments in favor of using the indirect (reconciliation) method as opposed to the direct method for reporting a statement of cash flows?

21. Why is it desirable to use a worksheet when preparing a statement of cash flows? Is a worksheet required to prepare a statement of cash flows?

Brief Exercises

BE22.1 (LO 1) Novak Corporation is preparing its 2025 statement of cash flows, using the indirect method. Presented below is a list of items that may affect the statement. Using the code below, indicate how each item will affect Novak's 2025 statement of cash flows.

Code Letter	Effect
A	Added to net income in the operating section
D	Deducted from net income in the operating section
R-I	Cash receipt in investing section
P-I	Cash payment in investing section
R-F	Cash receipt in financing section
P-F	Cash payment in financing section
N	Noncash investing and financing activity

Items

___ **a.** Purchase of land and building.
___ **b.** Decrease in accounts receivable.
___ **c.** Issuance of stock.
___ **d.** Depreciation expense.
___ **e.** Sale of land at book value.
___ **f.** Sale of land at a gain.
___ **g.** Payment of dividends.
___ **h.** Increase in accounts receivable.
___ **i.** Purchase of available-for-sale debt investment.
___ **j.** Increase in accounts payable.
___ **k.** Decrease in accounts payable.
___ **l.** Loan from bank by signing note.
___ **m.** Purchase of equipment using a note.
___ **n.** Increase in inventory.
___ **o.** Issuance of bonds.
___ **p.** Redemption of bonds payable.
___ **q.** Sale of equipment at a loss.
___ **r.** Purchase of treasury stock.

BE22.2 (LO 2) Wainwright Corporation had the following activities in 2025.

1. Sale of land $180,000.
2. Purchase of inventory $845,000.
3. Purchase of treasury stock $72,000.
4. Purchase of equipment $415,000.
5. Issuance of common stock $320,000.
6. Purchase of available-for-sale debt securities $59,000.

Compute the amount Wainwright should report as net cash provided (used) by investing activities in its 2025 statement of cash flows.

BE22.3 (LO 2) Stansfield Corporation had the following activities in 2025.

1. Payment of accounts payable $770,000.
2. Issuance of common stock $250,000.
3. Payment of dividends $350,000.
4. Collection of note receivable $100,000.
5. Issuance of bonds payable $510,000.
6. Purchase of treasury stock $46,000.

Compute the amount Stansfield should report as net cash provided (used) by financing activities in its 2025 statement of cash flows.

BE22.4 (LO 3) Bloom Corporation had the following 2025 income statement.

Sales revenue	$200,000
Cost of goods sold	120,000
Gross profit	80,000
Operating expenses (includes depreciation of $21,000)	50,000
Net income	$ 30,000

The following accounts increased during 2025: Accounts Receivable $12,000, Inventory $11,000, and Accounts Payable $13,000. Prepare the cash flows from operating activities section of Bloom's 2025 statement of cash flows using the direct method.

BE22.5 (LO 3) Use the information from BE22.4 for Bloom Corporation. Prepare the cash flows from operating activities section of Bloom's 2025 statement of cash flows using the indirect method.

BE22.6 (LO 3) At January 1, 2025, Eikenberry Inc. had accounts receivable of $72,000. At December 31, 2025, accounts receivable is $54,000. Sales revenue for 2025 total $420,000. Compute Eikenberry's 2025 cash receipts from customers.

BE22.7 (LO 3) Moxley Corporation had January 1 and December 31 balances as follows.

	1/1/25	12/31/25
Inventory	$95,000	$113,000
Accounts payable	61,000	69,000

For 2025, cost of goods sold was $500,000. Compute Moxley's 2025 cash payments to suppliers.

BE22.8 (LO 2) In 2025, Elbert Corporation had net cash provided by operating activities of $531,000, net cash used by investing activities of $963,000, and net cash provided by financing activities of $585,000. At January 1, 2025, the cash balance was $333,000. Compute December 31, 2025, cash.

BE22.9 (LO 2, 3) Colbert Corporation had the following 2025 income statement.

Revenues	$100,000
Expenses	60,000
Net income	$ 40,000

In 2025, Colbert had the following activity in selected accounts.

Accounts Receivable

1/1/25	20,000		
Revenues	100,000	Write-offs	1,000
		Collections	90,000
12/31/25	29,000		

Allowance for Doubtful Accounts

		1/1/25	1,200
Write-offs	1,000	Bad debt expense	1,840
		12/31/25	2,040

Prepare Colbert's cash flows from operating activities section of the statement of cash flows using (a) the direct method and (b) the indirect method.

BE22.10 (LO 2) Hendrickson Corporation reported net income of $50,000 in 2025. Depreciation expense was $17,000. The following working capital accounts changed.

Accounts receivable	$11,000 increase
Available-for-sale debt securities	16,000 increase
Inventory	7,400 increase
Nontrade note payable	15,000 decrease
Accounts payable	12,300 increase

Compute net cash provided by operating activities.

BE22.11 (LO 2, 4) In 2025, Wild Corporation reported a net loss of $70,000. Wild's only net income adjustments were depreciation expense $81,000, and increase in accounts receivable $8,100. Compute Wild's net cash provided (used) by operating activities.

BE22.12 (LO 4) In 2025, Leppard Inc. issued 1,000 shares of $10 par value common stock for land worth $40,000.

a. Prepare Leppard's journal entry to record the transaction.

b. Indicate the effect the transaction has on cash.

c. Indicate how the transaction is reported on the statement of cash flows.

BE22.13 (LO 5) Indicate in general journal form how the items below would be entered in a worksheet for the preparation of the statement of cash flows.

a. Net income is $317,000.

b. Cash dividends declared and paid totaled $120,000.

c. Equipment was purchased for $114,000.

d. Equipment that originally cost $40,000 and had accumulated depreciation of $32,000 was sold for $10,000.

Exercises

E22.1 (LO 1) (Classification of Transactions) Red Hot Chili Peppers Co. had the following activity in its most recent year of operations.

a. Purchase of equipment.

b. Redemption of bonds payable.

c. Sale of building.

d. Depreciation.

e. Exchange of equipment for furniture.

f. Issuance of common stock.

g. Amortization of intangible assets.

h. Purchase of treasury stock.

i. Issuance of bonds for land.

j. Payment of dividends.

k. Increase in interest receivable on notes receivable.

l. Pension expense exceeds amount funded.

Instructions

Classify the items as (1) operating—add to net income; (2) operating—deduct from net income; (3) investing; (4) financing; or (5) significant noncash investing and financing activities. Use the indirect method.

E22.2 (LO 1, 2) (Statement Presentation of Transactions—Indirect Method) Each of the following items must be considered in preparing a statement of cash flows (indirect method) for Turbulent Indigo Inc. for the year ended December 31, 2025.

a. Plant assets that had cost $20,000 6 years before and were being depreciated on a straight-line basis over 10 years with no estimated scrap value were sold for $5,300.

b. During the year, 10,000 shares of common stock with a stated value of $10 a share were issued for $43 a share.

c. Uncollectible accounts receivable in the amount of $27,000 were written off against Allowance for Doubtful Accounts.

d. The company sustained a net loss for the year of $50,000. Depreciation amounted to $22,000, and a gain of $9,000 was realized on the sale of land for $39,000 cash.

e. A 3-month U.S. Treasury bill was purchased for $100,000. The company uses a cash and cash equivalent basis for its cash flow statement.

f. Patent amortization for the year was $20,000.

g. The company exchanged common stock for a 70% interest in Tabasco Co. for $900,000.

h. During the year, treasury stock costing $47,000 was purchased.

Instructions

State where each item is to be shown in the statement of cash flows, if at all.

E22.3 (LO 2) Excel (Preparation of Operating Activities Section—Indirect Method, Periodic Inventory) The income statement of Vince Gill Company is shown below.

Vince Gill Company
Income Statement
For the Year Ended December 31, 2025

Sales revenue		$6,900,000
Cost of goods sold		
Beginning inventory	$1,900,000	
Purchases	4,400,000	
Goods available for sale	6,300,000	
Ending inventory	1,600,000	
Cost of goods sold		4,700,000
Gross profit		2,200,000
Operating expenses		
Selling expenses	450,000	
Administrative expenses	700,000	1,150,000
Net income		$1,050,000

Additional information:

1. Accounts receivable decreased $360,000 during the year.
2. Prepaid expenses increased $170,000 during the year.
3. Accounts payable to suppliers of merchandise decreased $275,000 during the year.
4. Accrued expenses payable decreased $100,000 during the year.
5. Administrative expenses include depreciation expense of $60,000.

Instructions

Prepare the operating activities section of the statement of cash flows for the year ended December 31, 2025, for Vince Gill Company, using the indirect method.

E22.4 (LO 3) Excel (Preparation of Operating Activities Section—Direct Method) Data for the Vince Gill Company are presented in E22.3.

Instructions

Prepare the operating activities section of the statement of cash flows using the direct method.

E22.5 (LO 3) (Preparation of Operating Activities Section—Direct Method) Krauss Company's income statement for the year ended December 31, 2025, contained the following condensed information.

Service revenue		$840,000
Operating expenses (excluding depreciation)	$624,000	
Depreciation expense	60,000	
Loss on sale of equipment	26,000	710,000
Income before income taxes		130,000
Income tax expense		40,000
Net income		$ 90,000

Krauss's balance sheet contained the following comparative data at December 31.

	2025	2024
Accounts receivable	$37,000	$54,000
Accounts payable	41,000	31,000
Income taxes payable	4,000	8,500

(Accounts payable pertains to operating expenses.)

Instructions

Prepare the operating activities section of the statement of cash flows using the direct method.

E22.6 (LO 2) (Preparation of Operating Activities Section—Indirect Method) Data for Krauss Company are presented in E22.5.

Instructions

Prepare the operating activities section of the statement of cash flows using the indirect method.

E22.7 (LO 3) (Computation of Operating Activities—Direct Method) Presented below are two independent situations.

Situation A: Annie Lennox Co. reports revenues of $200,000 and operating expenses of $110,000 in its first year of operations, 2025. Accounts receivable and accounts payable at year-end were $71,000 and $29,000, respectively. Assume that the accounts payable related to operating expenses. (Ignore income taxes.)

Instructions

Using the direct method, compute net cash provided by operating activities.

Situation B: The income statement for Blues Traveler Company shows cost of goods sold $310,000 and operating expenses (exclusive of depreciation) $230,000. The comparative balance sheet for the year shows that inventory increased $26,000, prepaid expenses decreased $8,000, accounts payable (related to merchandise) decreased $17,000, and accrued expenses payable increased $11,000.

Instructions

Compute (a) cash payments to suppliers and (b) cash payments for operating expenses.

E22.8 (LO 2, 4) (Schedule of Net Cash Flow from Operating Activities—Indirect Method) Ballard Co. reported $145,000 of net income for 2025. The accountant, in preparing the statement of cash flows, noted the following items occurring during 2025 that might affect cash flows from operating activities.

1. Ballard purchased 100 shares of treasury stock at a cost of $20 per share. These shares were then resold at $25 per share.
2. Ballard sold 100 shares of IBM common at $200 per share. The acquisition cost of these shares was $145 per share. There were no unrealized gains or losses recorded on this investment in 2025.
3. Ballard revised its estimate for bad debts. Before 2025, Ballard's bad debt expense was 1% of its receivables. In 2025, this percentage was increased to 2%. Net accounts receivable decreased by $12,000 during 2025.
4. Ballard issued 500 shares of its $10 par common stock for a patent. The market price of the shares on the date of the transaction was $23 per share.
5. Depreciation expense is $39,000.
6. Ballard Co. holds 40% of the Nirvana Company's common stock as a long-term investment. Nirvana Company reported $27,000 of net income for 2025.
7. Nirvana Company paid a total of $2,000 of cash dividends to all investees in 2025.
8. Ballard declared a 10% stock dividend. One thousand shares of $10 par common stock were distributed. The market price at date of issuance was $20 per share.

Instructions

Prepare a schedule that shows the net cash flow from operating activities using the indirect method. Assume no items other than those listed above affected the computation of 2025 net cash flow from operating activities.

E22.9 (LO 3, 4) (SCF—Direct Method) Los Lobos Corp. uses the direct method to prepare its statement of cash flows. Los Lobos's trial balances at December 31, 2025 and 2024, are as follows.

	December 31	
	2025	2024
Debits		
Cash	$ 35,000	$ 32,000
Accounts receivable	33,000	30,000
Inventory	31,000	47,000
Property, plant, and equipment	100,000	95,000
Unamortized bond discount	4,500	5,000
Cost of goods sold	250,000	380,000
Selling expenses	141,500	172,000
General and administrative expenses	137,000	151,300
Interest expense	4,300	2,600
Income tax expense	20,400	61,200
	$756,700	$976,100
Credits		
Allowance for doubtful accounts	$ 1,300	$ 1,100
Accumulated depreciation—plant assets	16,500	15,000
Accounts payable	25,000	15,500
Income taxes payable	21,000	29,100
Deferred tax liability	5,300	4,600
8% callable bonds payable	45,000	20,000
Common stock	50,000	40,000
Paid-in capital in excess of par	9,100	7,500
Retained earnings	44,700	64,600
Sales revenue	538,800	778,700
	$756,700	$976,100

Additional information:

1. Los Lobos purchased $5,000 in equipment during 2025.
2. Los Lobos allocated one-third of its depreciation expense to selling expenses and the remainder to general and administrative expenses.
3. Bad debt expense for 2025 was $5,000, and write-offs of uncollectible accounts totaled $4,800.

Instructions

Determine what amounts Los Lobos should report in its statement of cash flows for the year ended December 31, 2025, for the following items.

a. Cash collected from customers.
b. Cash paid to suppliers.
c. Cash paid for interest.
d. Cash paid for income taxes.
e. Cash paid for selling expenses.

E22.10 (LO 1, 4) (Classification of Transactions) Following are selected balance sheet accounts of Allman Bros. Corp. at December 31, 2025 and 2024, and the increases or decreases in each account from 2024 to 2025. Also presented is selected income statement information for the year ended December 31, 2025, and additional information.

	2025	2024	Increase (Decrease)
Selected balance sheet accounts:			
Assets			
Accounts receivable	$ 34,000	$ 24,000	$ 10,000
Property, plant, and equipment	277,000	247,000	30,000
Accumulated depreciation—plant assets	(178,000)	(167,000)	(11,000)
Liabilities and stockholders' equity			
Bonds payable	$ 49,000	$ 46,000	$ 3,000
Dividends payable	8,000	5,000	3,000
Common stock, $1 par	22,000	19,000	3,000
Additional paid-in capital	9,000	3,000	6,000
Retained earnings	104,000	91,000	13,000
Selected income statement information for the year ended December 31, 2025:			
Sales revenue	$ 155,000		
Depreciation	33,000		
Gain on sale of equipment	14,500		
Net income	31,000		

Additional information:

1. During 2025, equipment costing $45,000 was sold for cash.
2. Accounts receivable relate to sales of merchandise.
3. During 2025, $20,000 of bonds payable were issued in exchange for property, plant, and equipment. There was no amortization of bond discount or premium.

Instructions

Determine the category (operating, investing, or financing) and the amount that should be reported in the statement of cash flows for the following items.

a. Payments for purchase of property, plant, and equipment.

b. Proceeds from the sale of equipment.

c. Cash dividends paid.

d. Redemption of bonds payable.

E22.11 (LO 2) (SCF—Indirect Method) Condensed financial data of Pat Metheny Company for 2025 and 2024 are presented below.

Pat Metheny Company
Comparative Balance Sheet
As of December 31, 2025 and 2024

	2025	2024
Cash	$1,800	$1,150
Receivables	1,750	1,300
Inventory	1,600	1,900
Plant assets	1,900	1,700
Accumulated depreciation	(1,200)	(1,170)
Long-term investments (held-to-maturity)	1,300	1,420
	$7,150	$6,300
Accounts payable	$1,200	$ 900
Accrued liabilities	200	250
Bonds payable	1,400	1,550
Common stock	1,900	1,700
Retained earnings	2,450	1,900
	$7,150	$6,300

Pat Metheny Company
Income Statement
For the Year Ended December 31, 2025

Sales revenue	$6,900
Cost of goods sold	4,700
Gross margin	2,200
Selling and administrative expense	930
Income from operations	1,270
Other revenues and gains	
Gain on sale of investments	80
Income before tax	1,350
Income tax expense	540
Net income	810
Cash dividends	260
Income retained in business	$ 550

Additional information:

During the year, $70 of common stock was issued in exchange for plant assets. No plant assets were sold in 2025.

Instructions

Prepare a statement of cash flows using the indirect method.

E22.12 (LO 2, 3) (SCF—Direct Method) Data for Pat Metheny Company are presented in E22.11.

Instructions

Prepare a statement of cash flows using the direct method. (Do not prepare a reconciliation schedule.)

E22.13 (LO 2, 3) (SCF—Direct Method) Brecker Inc., a greeting card company, had the following statements prepared as of December 31, 2025.

Brecker Inc.
Comparative Balance Sheet
As of December 31, 2025 and 2024

	12/31/25	12/31/24
Cash	$ 6,000	$ 7,000
Accounts receivable	62,000	51,000
Short-term debt investments (available-for-sale)	35,000	18,000
Inventory	40,000	60,000
Prepaid rent	5,000	4,000
Equipment	154,000	130,000
Accumulated depreciation—equipment	(35,000)	(25,000)
Copyrights	46,000	50,000
Total assets	$313,000	$295,000
Accounts payable	$ 46,000	$ 40,000
Income taxes payable	4,000	6,000
Salaries and wages payable	8,000	4,000
Short-term loans payable	8,000	10,000
Long-term loans payable	60,000	69,000
Common stock, $10 par	100,000	100,000
Paid-in capital, common stock	30,000	30,000
Retained earnings	57,000	36,000
Total liabilities and stockholders' equity	$313,000	$295,000

Brecker Inc.
Income Statement
For the Year Ending December 31, 2025

Sales revenue		$338,150
Cost of goods sold		175,000
Gross profit		163,150
Operating expenses		120,000
Operating income		43,150
Interest expense	$11,400	
Gain on sale of equipment	2,000	9,400
Income before tax		33,750
Income tax expense		6,750
Net income		$ 27,000

Additional information:

1. Dividends in the amount of $6,000 were declared and paid during 2025.
2. Depreciation expense and amortization expense are included in operating expenses.
3. No unrealized gains or losses have occurred on the investments during the year.
4. Equipment that had a cost of $20,000 and was 70% depreciated was sold during 2025.

Instructions

Prepare a statement of cash flows using the direct method. (Do not prepare a reconciliation schedule.)

E22.14 (LO 2) (SCF—Indirect Method) Data for Brecker Inc. are presented in E22.13.

Instructions

Prepare a statement of cash flows using the indirect method.

E22.15 (LO 2) (SCF—Indirect Method) The following data are taken from the records of Alee Company.

	December 31, 2025	December 31, 2024
Cash	$ 15,000	$ 8,000
Current assets other than cash	85,000	60,000
Long-term debt investments	10,000	53,000
Plant assets	335,000	215,000
	$445,000	$336,000
Accumulated depreciation	$ 20,000	$ 40,000
Current liabilities	40,000	22,000
Bonds payable	75,000	–0–
Common stock	254,000	254,000
Retained earnings	56,000	20,000
	$445,000	$336,000

Additional information:

1. Held-to-maturity debt securities carried at a cost of $43,000 on December 31, 2024, were sold in 2025 for $34,000. The loss (not unusual) was incorrectly charged directly to Retained Earnings.
2. Plant assets that cost $50,000 and were 80% depreciated were sold during 2025 for $8,000. The loss was incorrectly charged directly to Retained Earnings.
3. Net income as reported on the income statement for the year was $57,000.
4. Dividends paid amounted to $10,000.
5. Depreciation charged for the year was $20,000.

Instructions

Prepare a statement of cash flows for the year 2025 using the indirect method.

E22.16 (LO 1, 2) (Cash Provided by Operating, Investing, and Financing Activities) The balance sheet data of Brown Company at the end of 2025 and 2024 follow.

	2025	2024
Cash	$ 30,000	$ 35,000
Accounts receivable (net)	55,000	45,000
Inventory	65,000	45,000
Prepaid expenses	15,000	25,000
Equipment	90,000	75,000
Accumulated depreciation—equipment	(18,000)	(8,000)
Land	70,000	40,000
	$307,000	$257,000
Accounts payable	$ 65,000	$ 52,000
Accrued expenses	15,000	18,000
Notes payable—bank, long-term	–0–	23,000
Bonds payable	30,000	–0–
Common stock, $10 par	189,000	159,000
Retained earnings	8,000	5,000
	$307,000	$257,000

Land was acquired for $30,000 in exchange for common stock, par $30,000, during the year; all equipment purchased was for cash. Equipment costing $10,000 was sold for $3,000; book value of the equipment was $6,000. Cash dividends of $10,000 were declared and paid during the year.

Instructions

Compute net cash provided (used) by:

a. Operating activities.

b. Investing activities.

c. Financing activities.

E22.17 (LO 2) (SCF—Indirect Method and Balance Sheet) Jobim Inc. had the following condensed balance sheet at the end of operations for 2024.

Jobim Inc.
Balance Sheet
December 31, 2024

Cash	$ 8,500	Current liabilities	$ 15,000
Current assets other than cash	29,000	Long-term notes payable	25,500
Equity investments	20,000	Bonds payable	25,000
Plant assets (net)	67,500	Common stock	75,000
Land	40,000	Retained earnings	24,500
	$165,000		$165,000

During 2025, the following occurred.

1. A tract of land was purchased for $9,000.
2. Bonds payable in the amount of $15,000 were redeemed at par.
3. An additional $10,000 in common stock was issued at par.
4. Dividends totaling $9,375 were paid to stockholders.
5. Net income was $35,250 after allowing depreciation of $13,500.
6. Land was purchased through the issuance of $22,500 in bonds.
7. Jobim Inc. sold part of its investment portfolio for $12,875. This transaction resulted in a gain of $2,000 for the company. No unrealized gains or losses were recorded on these investments in 2025.
8. Both current assets (other than cash) and current liabilities remained at the same amount.

Instructions

a. Prepare a statement of cash flows for 2025 using the indirect method.

b. Prepare the condensed balance sheet for Jobim Inc. as it would appear at December 31, 2025.

E22.18 (LO 2, 4) (Partial SCF—Indirect Method) The accounts below appear in the ledger of Anita Baker Company.

	Retained Earnings	Dr.	Cr.	Bal.
Jan. 1, 2025	Credit balance			$ 42,000
Aug. 15	Dividends (cash)	$15,000		27,000
Dec. 31	Net income for 2025		$40,000	67,000
	Equipment	**Dr.**	**Cr.**	**Bal.**
Jan. 1, 2025	Debit balance			$140,000
Aug. 3	Purchase of equipment	$62,000		202,000
Sept. 10	Cost of equipment constructed	48,000		250,000
Nov. 15	Equipment sold		$56,000	194,000
	Accumulated Depreciation—Equipment	**Dr.**	**Cr.**	**Bal.**
Jan. 1, 2025	Credit balance			$ 84,000
Apr. 8	Major repairs	$21,000		63,000
Nov. 15	Accum. depreciation on equipment sold	25,200		37,800
Dec. 31	Depreciation for 2025		$16,800	54,600

Instructions

From the postings in the accounts above, indicate how the information is reported on a statement of cash flows by preparing a partial statement of cash flows using the indirect method. The loss on sale of equipment (November 15) was $5,800.

E22.19 (LO 5) (Worksheet Analysis of Selected Accounts) Data for Anita Baker Company are presented in E22.18.

Instructions

Prepare entries in journal form for all adjustments that should be made on a worksheet for a statement of cash flows.

E22.20 (LO 5) (Worksheet Analysis of Selected Transactions) The transactions below took place during the year 2025.

1. Convertible bonds payable with a par value of $300,000 were exchanged for unissued common stock with a par value of $300,000. The market price of both types of securities was par.
2. The net income for the year was $410,000.
3. Depreciation expense for the building was $90,000.
4. Some old office equipment was traded in on the purchase of some dissimilar office equipment, and the following entry was made.

Equipment	50,000	
Accumulated Depreciation—Equipment	30,000	
Equipment		40,000
Cash		34,000
Gain on Disposal of Plant Assets		6,000

   The Gain on Disposal of Plant Assets was included in income before income taxes.
5. Dividends in the amount of $123,000 were declared. They are payable in January of next year.

Instructions

Show by journal entries the adjustments that would be made on a worksheet for a statement of cash flows.

E22.21 (LO 5) (Worksheet Preparation) Below is the comparative balance sheet for Stevie Wonder Corporation.

	Dec. 31, 2025	Dec. 31, 2024
Cash	$ 16,500	$ 21,000
Short-term investments	25,000	19,000
Accounts receivable	43,000	45,000
Allowance for doubtful accounts	(1,800)	(2,000)
Prepaid expenses	4,200	2,500
Inventory	81,500	65,000
Land	50,000	50,000
Buildings	125,000	73,500
Accumulated depreciation—buildings	(30,000)	(23,000)
Equipment	53,000	46,000
Accumulated depreciation—equipment	(19,000)	(15,500)
Delivery equipment	39,000	39,000
Accumulated depreciation—delivery equipment	(22,000)	(20,500)
Patents	15,000	–0–
	$379,400	$300,000
Accounts payable	$ 26,000	$ 16,000
Short-term notes payable (trade)	4,000	6,000
Accrued payables	3,000	4,600
Mortgage payable	73,000	53,400
Bonds payable	50,000	62,500
Common stock	140,000	102,000
Paid-in capital in excess of par	10,000	4,000
Retained earnings	73,400	51,500
	$379,400	$300,000

Dividends in the amount of $15,000 were declared and paid in 2025.

Instructions

From this information, prepare a worksheet for a statement of cash flows. Make reasonable assumptions as appropriate. The short-term investments are considered available-for-sale debt securities and no unrealized gains or losses have occurred on these securities.

Problems

P22.1 (LO 2, 4) (SCF—Indirect Method) The following are Sullivan Corp.'s comparative balance sheet accounts at December 31, 2025 and 2024, with a column showing the increase (decrease) from 2024 to 2025.

	Comparative Balance Sheets		
	2025	2024	Increase (Decrease)
Cash	$ 815,000	$ 700,000	$115,000
Accounts receivable	1,128,000	1,168,000	(40,000)
Inventory	1,850,000	1,715,000	135,000
Property, plant, and equipment	3,307,000	2,967,000	340,000
Accumulated depreciation	(1,165,000)	(1,040,000)	(125,000)
Investment in Myers Co.	310,000	275,000	35,000
Loan receivable	250,000	—	250,000
Total assets	$6,495,000	$5,785,000	$710,000
Accounts payable	$1,015,000	$ 955,000	$ 60,000
Income taxes payable	30,000	50,000	(20,000)
Dividends payable	80,000	100,000	(20,000)
Lease liability	400,000	—	400,000
Common stock, $1 par	500,000	500,000	—
Paid-in capital in excess of par—common stock	1,500,000	1,500,000	—
Retained earnings	2,970,000	2,680,000	290,000
Total liabilities and stockholders' equity	$6,495,000	$5,785,000	$710,000

Additional information:

1. On December 31, 2024, Sullivan acquired 25% of Myers Co.'s common stock for $275,000. On that date, the carrying value of Myers's assets and liabilities, which approximated their fair values, was $1,100,000. Myers reported income of $140,000 for the year ended December 31, 2025. No dividend was paid on Myers's common stock during the year.
2. During 2025, Sullivan loaned $300,000 to TLC Co., an unrelated company. TLC made the first semi-annual principal repayment of $50,000, plus interest at 10%, on December 31, 2025.
3. On January 2, 2025, Sullivan sold equipment costing $60,000, with a carrying amount of $38,000, for $40,000 cash.
4. On December 31, 2025, Sullivan entered into a capital lease for an office building. The present value of the annual rental payments is $400,000, which equals the fair value of the building. Sullivan made the first rental payment of $60,000 when due on January 2, 2026.
5. Net income for 2025 was $370,000.
6. Sullivan declared and paid the following cash dividends for 2025 and 2024.

	2025	2024
Declared	December 15, 2025	December 15, 2024
Paid	February 28, 2026	February 28, 2025
Amount	$80,000	$100,000

Instructions

Prepare a statement of cash flows for Sullivan Corp. for the year ended December 31, 2025, using the indirect method.

(AICPA adapted)

P22.2 (LO 2, 4) Excel Groupwork (SCF—Indirect Method) The comparative balance sheets for Hinckley Corporation show the following information.

	December 31	
	2025	2024
Cash	$ 33,500	$13,000
Accounts receivable	12,250	10,000
Inventory	12,000	9,000
Available-for-sale debt investments	–0–	3,000
Buildings	–0–	29,750
Equipment	45,000	20,000
Patents	5,000	6,250
	$107,750	$91,000

	December 31	
	2025	2024
Allowance for doubtful accounts	$ 3,000	$ 4,500
Accumulated depreciation—equipment	2,000	4,500
Accumulated depreciation—building	–0–	6,000
Accounts payable	5,000	3,000
Dividends payable	–0–	5,000
Notes payable, short-term (nontrade)	3,000	4,000
Long-term notes payable	31,000	25,000
Common stock	43,000	33,000
Retained earnings	20,750	6,000
	$107,750	$91,000

Additional data related to 2025 are as follows.

1. Equipment that had cost $11,000 and was 40% depreciated at time of disposal was sold for $2,500.
2. $10,000 of the long-term note payable was paid by issuing common stock.
3. Cash dividends paid were $5,000.
4. On January 1, 2025, the building was completely destroyed by a flood. Insurance proceeds on the building were $30,000 (net of $2,000 taxes).
5. Debt investments (available-for-sale) were sold at $1,700 above their cost. The company has made similar sales and investments in the past.
6. Cash was paid for the acquisition of equipment.
7. A long-term note for $16,000 was issued for the acquisition of equipment.
8. Interest of $2,000 and income taxes of $6,500 were paid in cash.

Instructions

Prepare a statement of cash flows using the indirect method.

P22.3 (LO 3) Excel (SCF—Direct Method) Mortonson Company has not yet prepared a statement of cash flows for the 2025 fiscal year. Comparative balance sheets as of December 31, 2024 and 2025, and a statement of income and retained earnings for the year ended December 31, 2025, are presented as follows.

Mortonson Company
Statement of Income and Retained Earnings
For the Year Ended December 31, 2025
($000 omitted)

Sales revenue		$3,800
Expenses		
Cost of goods sold	$1,200	
Salaries and benefits	725	
Heat, light, and power	75	
Depreciation	80	
Property taxes	19	
Patent amortization	25	
Miscellaneous expenses	10	
Interest	30	2,164
Income before income taxes		1,636
Income taxes		818
Net income		818
Retained earnings—Jan. 1, 2025		310
		1,128
Stock dividend declared and issued		600
Retained earnings—Dec. 31, 2025		$ 528

Mortonson Company
Comparative Balance Sheets
As of December 31
($000 omitted)

	2025	2024
Assets		
Current assets		
Cash	$ 333	$ 100
U.S. Treasury notes (available-for-sale)	10	50
Accounts receivable	780	500
Inventory	720	560
Total current assets	1,843	1,210
Long-term assets		
Land	150	70
Buildings and equipment	910	600
Accumulated depreciation—buildings and equipment	(200)	(120)
Patents (less amortization)	105	130
Total long-term assets	965	680
Total assets	$2,808	$1,890
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 420	$ 330
Income taxes payable	40	30
Notes payable	320	320
Total current liabilities	780	680
Long-term notes payable—due 2027	200	200
Total liabilities	980	880
Stockholders' equity		
Common stock	1,300	700
Retained earnings	528	310
Total stockholders' equity	1,828	1,010
Total liabilities and stockholders' equity	$2,808	$1,890

Instructions

Prepare a statement of cash flows using the direct method. Changes in accounts receivable and accounts payable relate to sales and cost of goods sold. Do not prepare a reconciliation schedule.

(CMA adapted)

P22.4 (LO 3, 4) (SCF—Direct Method) Michaels Company had available at the end of 2025 the following information.

Michaels Company
Comparative Balance Sheets
As of December 31, 2025 and 2024

	2025	2024
Cash	$ 10,000	$ 4,000
Accounts receivable	20,500	12,950
Short-term investments	22,000	30,000
Inventory	42,000	35,000
Prepaid rent	3,000	12,000
Prepaid insurance	2,100	900
Supplies	1,000	750
Land	125,000	175,000
Buildings	350,000	350,000
Accumulated depreciation—buildings	(105,000)	(87,500)
Equipment	525,000	400,000
Accumulated depreciation—equipment	(130,000)	(112,000)
Patents	45,000	50,000
Total assets	$910,600	$871,100

	2025	2024
Accounts payable	$ 22,000	$ 32,000
Income taxes payable	5,000	4,000
Salaries and wages payable	5,000	3,000
Short-term notes payable	10,000	10,000
Long-term notes payable	60,000	70,000
Bonds payable	400,000	400,000
Premium on bonds payable	20,303	25,853
Common stock	240,000	220,000
Paid-in capital in excess of par—common stock	25,000	17,500
Retained earnings	123,297	88,747
Total liabilities and stockholders' equity	$910,600	$871,100

Michaels Company
Income Statement and Dividend Information
For the Year Ended December 31, 2025

Sales revenue		$1,160,000
Cost of goods sold		748,000
Gross margin		412,000
Operating expenses		
Selling expenses	$ 79,200	
Administrative expenses	156,700	
Depreciation/Amortization expense	40,500	
Total operating expenses		276,400
Income from operations		135,600
Other revenues/expenses		
Gain on sale of land	8,000	
Gain on sale of short-term investment	4,000	
Dividend revenue	2,400	
Interest expense	(51,750)	(37,350)
Income before taxes		98,250
Income tax expense		39,400
Net income		58,850
Dividends to common stockholders		(24,300)
To retained earnings		$34,550

Instructions

Prepare a statement of cash flows for Michaels Company using the direct method accompanied by a reconciliation schedule. Assume the short-term investments are debt securities, classified as available-for-sale.

P22.5 (LO 2, 4) (SCF—Indirect Method) You have completed the field work in connection with your audit of Alexander Corporation for the year ended December 31, 2025. The balance sheet accounts at the beginning and end of the year are shown below.

	Dec. 31, 2025	Dec. 31, 2024	Increase or (Decrease)
Cash	$ 277,900	$ 298,000	($20,100)
Accounts receivable	469,424	353,000	116,424
Inventory	741,700	610,000	131,700
Prepaid expenses	12,000	8,000	4,000
Investment in subsidiary	110,500	–0–	110,500
Cash surrender value of life insurance	2,304	1,800	504
Machinery	207,000	190,000	17,000
Buildings	535,200	407,900	127,300
Land	52,500	52,500	–0–
Patents	69,000	64,000	5,000
Copyrights	40,000	50,000	(10,000)
Bond discount and issue costs	4,502	–0–	4,502
	$2,522,030	$2,035,200	$ 486,830

	Dec. 31, 2025	Dec. 31, 2024	Increase or (Decrease)
Income taxes payable	$ 90,250	$ 79,600	$ 10,650
Accounts payable	299,280	280,000	19,280
Dividends payable	70,000	–0–	70,000
Bonds payable—8%	125,000	–0–	125,000
Bonds payable—12%	–0–	100,000	(100,000)
Allowance for doubtful accounts	35,300	40,000	(4,700)
Accumulated depreciation—buildings	424,000	400,000	24,000
Accumulated depreciation—machinery	173,000	130,000	43,000
Premium on bonds payable	–0–	2,400	(2,400)
Common stock—no par	1,176,200	1,453,200	(277,000)
Paid-in capital in excess of par—common stock	109,000	–0–	109,000
Retained earnings—unappropriated	20,000	(450,000)	470,000
	$2,522,030	$2,035,200	$ 486,830

Statement of Retained Earnings
For the Year Ended December 31, 2025

January	1, 2025	Balance (deficit)	$(450,000)
March	31, 2025	Net income for first quarter of 2025	25,000
April	1, 2025	Transfer from paid-in capital	425,000
		Balance	–0–
December	31, 2025	Net income for last three quarters of 2025	90,000
		Dividend declared—payable January 21, 2026	(70,000)
		Balance	$ 20,000

Your working papers from the audit contain the following information:

1. On April 1, 2025, the existing deficit was written off against paid-in capital created by reducing the stated value of the no-par stock.
2. On November 1, 2025, 29,600 shares of no-par stock were sold for $257,000. The board of directors voted to regard $5 per share as stated capital.
3. A patent was purchased for $15,000.
4. During the year, machinery that had a cost basis of $16,400 and on which there was accumulated depreciation of $5,200 was sold for $9,000. No other plant assets were sold during the year.
5. The 12%, 20-year bonds were dated and issued on January 2, 2013. Interest was payable on June 30 and December 31. They were sold originally at 106. These bonds were redeemed at 100.9 plus accrued interest on March 31, 2025.
6. The 8%, 40-year bonds were dated January 1, 2025, and were sold on March 31 at 97 plus accrued interest. Interest is payable semiannually on June 30 and December 31. Expense of issuance was $839.
7. Alexander Corporation acquired 70% control in Crimson Company on January 2, 2025, for $100,000. The income statement of Crimson Company for 2025 shows a net income of $15,000.
8. Major repairs to buildings of $7,200 were charged to Accumulated Depreciation—Buildings.
9. Interest paid in 2025 was $10,500 and income taxes paid were $34,000.

Instructions

From the information given, prepare a statement of cash flows using the indirect method. A worksheet is not necessary, but the principal computations should be supported by schedules or general ledger accounts. The company uses straight-line amortization for bond interest.

P22.6 (LO 2, 3, 4) (SCF—Indirect Method, and Net Cash Flow from Operating Activities, Direct Method) Comparative balance sheet accounts of Marcus Inc. are presented below.

Marcus Inc.
Comparative Balance Sheet Accounts
As of December 31, 2025 and 2024

	December 31	
	2025	**2024**
Debit Accounts		
Cash	$ 42,000	$ 33,750
Accounts Receivable	70,500	60,000
Inventory	30,000	24,000
Equity Investments	22,250	38,500
Machinery	30,000	18,750
Buildings	67,500	56,250
Land	7,500	7,500
	$269,750	$238,750
Credit Accounts		
Allowance for Doubtful Accounts	$ 2,250	$ 1,500
Accumulated Depreciation—Machinery	5,625	2,250
Accumulated Depreciation—Buildings	13,500	9,000
Accounts Payable	35,000	24,750
Accrued Payables	3,375	2,625
Long-Term Notes Payable	21,000	31,000
Common Stock, no-par	150,000	125,000
Retained Earnings	39,000	42,625
	$269,750	$238,750

Additional data (ignoring taxes):

1. Net income for the year was $42,500.
2. Cash dividends declared and paid during the year were $21,125.
3. A 20% stock dividend was declared during the year. $25,000 of retained earnings was capitalized.
4. Equity investments (level of ownership is less than 20%) that cost $25,000 were sold during the year for $28,750. No unrealized gains and losses were recorded on these investments in 2025.
5. Machinery that cost $3,750, on which $750 of depreciation had accumulated, was sold for $2,200.

Marcus's 2025 income statement follows (ignoring taxes).

Sales revenue		$540,000
Less: Cost of goods sold		380,000
Gross margin		160,000
Less: Operating expenses (includes $8,625 depreciation and $5,400 bad debts)		120,450
Income from operations		39,550
Other: Gain on sale of investments	$3,750	
Loss on sale of machinery	(800)	2,950
Net income		$ 42,500

Instructions

a. Compute net cash flow from operating activities using the direct method.

b. Prepare a statement of cash flows using the indirect method.

P22.7 (LO 2, 3, 4) Groupwork (SCF—Direct and Indirect Methods from Comparative Financial Statements) Chapman Company, a major retailer of bicycles and accessories, operates several stores and is a publicly traded company. The comparative balance sheet and income statement for Chapman as of May 31, 2025, are as follows. The company is preparing its statement of cash flows.

Chapman Company
Comparative Balance Sheet
As of May 31

	2025	2024
Current assets		
Cash	$ 28,250	$20,000
Accounts receivable	75,000	58,000
Inventory	220,000	250,000
Prepaid expenses	9,000	7,000
Total current assets	332,250	335,000
Plant assets		
Plant assets	600,000	502,000
Less: Accumulated depreciation—plant assets	150,000	125,000
Net plant assets	450,000	377,000
Total assets	$782,250	$712,000
Current liabilities		
Accounts payable	$123,000	$115,000
Salaries and wages payable	47,250	72,000
Interest payable	27,000	25,000
Total current liabilities	197,250	212,000
Long-term debt		
Bonds payable	70,000	100,000
Total liabilities	267,250	312,000
Stockholders' equity		
Common stock, $10 par	370,000	280,000
Retained earnings	145,000	120,000
Total stockholders' equity	515,000	400,000
Total liabilities and stockholders' equity	$782,250	$712,000

Chapman Company
Income Statement
For the Year Ended May 31, 2025

Sales revenue	$1,255,250
Cost of goods sold	722,000
Gross profit	533,250
Expenses	
Salaries and wages expense	252,100
Interest expense	75,000
Depreciation expense	25,000
Other expenses	8,150
Total expenses	360,250
Operating income	173,000
Income tax expense	43,000
Net income	$ 130,000

The following is additional information concerning Chapman's transactions during the year ended May 31, 2025.

1. All sales during the year were made on account.
2. All merchandise was purchased on account, comprising the total accounts payable account.
3. Plant assets costing $98,000 were purchased by paying $28,000 in cash and issuing 7,000 shares of stock.
4. The "other expenses" are related to prepaid items.
5. All income taxes incurred during the year were paid during the year.
6. In order to supplement its cash, Chapman issued 2,000 shares of common stock at par value.
7. Cash dividends of $105,000 were declared and paid at the end of the fiscal year.

Instructions

a. Compare and contrast the direct method and the indirect method for reporting cash flows from operating activities.

b. Prepare a statement of cash flows for Chapman Company for the year ended May 31, 2025, using the direct method. Be sure to support the statement with appropriate calculations. (A reconciliation of net income to net cash provided is not required.)

c. Using the indirect method, calculate only the net cash flow from operating activities for Chapman Company for the year ended May 31, 2025.

P22.8 (LO 2, 3) (SCF—Direct and Indirect Methods) Comparative balance sheet accounts of Sharpe Company are presented below.

Sharpe Company
Comparative Balance Sheet Accounts
As of December 31

	2025	2024
Debit Balances		
Cash	$ 70,000	$ 51,000
Accounts Receivable	155,000	130,000
Inventory	75,000	61,000
Debt Investments (available-for-sale)	55,000	85,000
Equipment	70,000	48,000
Buildings	145,000	145,000
Land	40,000	25,000
Totals	$610,000	$545,000
Credit Balances		
Allowance for Doubtful Accounts	$ 10,000	$ 8,000
Accumulated Depreciation—Equipment	21,000	14,000
Accumulated Depreciation—Buildings	37,000	28,000
Accounts Payable	66,000	60,000
Income Taxes Payable	12,000	10,000
Long-Term Notes Payable	62,000	70,000
Common Stock	310,000	260,000
Retained Earnings	92,000	95,000
Totals	$610,000	$545,000

Additional data:

1. Equipment that cost $10,000 and was 60% depreciated was sold in 2025.
2. Cash dividends were declared and paid during the year.
3. Common stock was issued in exchange for land.
4. Debt investments that cost $35,000 were sold during the year.
5. There were no write-offs of uncollectible accounts during the year.

Sharpe's 2025 income statement is as follows.

Sales revenue		$950,000
Less: Cost of goods sold		600,000
Gross profit		350,000
Less: Operating expenses (includes depreciation expense and bad debt expense)		250,000
Income from operations		100,000
Other revenues and expenses		
Gain on sale of investments	$15,000	
Loss on sale of equipment	(3,000)	12,000
Income before taxes		112,000
Income taxes		45,000
Net income		$67,000

Instructions

a. Compute net cash provided by operating activities under the direct method.

b. Prepare a statement of cash flows using the indirect method.

P22.9 (LO 2, 4) (Indirect SCF) Dingel Corporation has contracted with you to prepare a statement of cash flows. The controller has provided the following information.

	December 31	
	2025	**2024**
Cash	$ 38,500	$13,000
Accounts receivable	12,250	10,000
Inventory	12,000	10,000
Equity investments	–0–	3,000
Buildings	–0–	29,750
Equipment	40,000	20,000
Copyrights	5,000	5,250
Totals	$107,750	$91,000
Allowance for doubtful accounts	$ 3,000	$ 4,500
Accumulated depreciation—equipment	2,000	4,500
Accumulated depreciation—buildings	–0–	6,000
Accounts payable	5,000	4,000
Dividends payable	–0–	5,000
Notes payable, short-term (nontrade)	3,000	4,000
Long-term notes payable	36,000	25,000
Common stock	38,000	33,000
Retained earnings	20,750	5,000
	$107,750	$91,000

Additional data related to 2025 are as follows.

1. Equipment that had cost $11,000 and was 30% depreciated at time of disposal was sold for $2,500.
2. $5,000 of the long-term note payable was paid by issuing common stock.
3. Cash dividends paid were $5,000.
4. On January 1, 2025, the building was completely destroyed by a flood. Insurance proceeds on the building were $33,000 (net of $4,000 taxes).
5. Equity investments (ownership is less than 20% of total shares) were sold at $1,500 above their cost. No unrealized gains or losses were recorded in 2025.
6. Cash and a long-term note for $16,000 were given for the acquisition of equipment.
7. Interest of $2,000 and income taxes of $5,000 were paid in cash.

Instructions

a. Use the indirect method to analyze the above information and prepare a statement of cash flows for Dingel.

b. What would you expect to observe in the operating, investing, and financing sections of a statement of cash flows of:

1. A severely financially troubled firm?
2. A recently formed firm that is experiencing rapid growth?

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ22.1 The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. Which method of computing net cash provided by operating activities does P&G use? What were the amounts of net cash provided by operating activities for the years 2018, 2019, and 2020? Which two items were the largest adjustments to net income to determine net cash provided by operating activities in 2020?

b. What was the most significant item in the cash flows used for investing activities section in 2020? What was the most significant item in the cash flows used for financing activities section in 2020?

c. Where is "deferred income taxes" reported in P&G's statement of cash flows? Why does it appear in that section of the statement of cash flows?

d. Where is depreciation reported in P&G's statement of cash flows? Why is depreciation added to net income in the statement of cash flows?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ22.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. What method of computing net cash provided by operating activities does Coca-Cola use? What method does PepsiCo use? What were the amounts of cash provided by operating activities reported by Coca-Cola and PepsiCo in 2020?

b. What was the most significant item reported by Coca-Cola and PepsiCo in 2020 in their investing activities sections? What is the most significant item reported by Coca-Cola and PepsiCo in 2020 in their financing activities sections?

c. What were these two companies' trends in net cash provided by operating activities over the period 2018 to 2020?

d. Where is "depreciation and amortization" reported by Coca-Cola and PepsiCo in their statements of cash flows? What is the amount and why does it appear in that section of the statement of cash flows?

e. Based on the information contained in Coca-Cola's and PepsiCo's financial statements, compute the following 2020 ratios for each company. These ratios require the use of statement of cash flows data. (These ratios were covered in Chapter 4.)

1. Current cash debt coverage.

2. Cash debt coverage.

f. What conclusions concerning the management of cash can be drawn from the ratios computed in (e)?

Financial Statement Analysis Case: Vermont Teddy Bear Co.

UYJ22.3 Founded in the early 1980s, the **Vermont Teddy Bear Co.** designs and manufactures American-made teddy bears and markets them primarily as gifts called Bear-Grams or Teddy Bear-Grams. Bear-Grams are personalized teddy bears delivered directly to the recipient for special occasions such as birthdays and anniversaries. The Shelburne, Vermont, company's primary markets are New York, Boston, and Chicago. Sales have jumped dramatically in recent years. Such dramatic growth has significant implications for cash flows. Provided below are the cash flow statements for two recent years for the company.

	Current Year	Prior Year
Cash flows from operating activities:		
Net income	$ 17,523	$ 838,955
Adjustments to reconcile net income to net cash provided by operating activities		
Deferred income taxes	(69,524)	(146,590)
Depreciation and amortization	316,416	181,348
Changes in assets and liabilities:		
Accounts receivable, trade	(38,267)	(25,947)
Inventories	(1,599,014)	(1,289,293)
Prepaid and other current assets	(444,794)	(113,205)
Deposits and other assets	(24,240)	(83,044)
Accounts payable	2,017,059	(284,567)
Accrued expenses	61,321	170,755
Accrued interest payable, debentures	—	(58,219)
Other	—	(8,960)
Income taxes payable	—	117,810

	Current Year	Prior Year
Net cash provided by (used for) operating activities	236,480	(700,957)
Net cash used for investing activities	(2,102,892)	(4,422,953)
Net cash (used for) provided by financing activities	(315,353)	9,685,435
Net change in cash and cash equivalents	$(2,181,765)	$ 4,561,525
Other information:		
Current liabilities	$ 4,055,465	$ 1,995,600
Total liabilities	4,620,085	2,184,386
Net sales	20,560,566	17,025,856

Instructions

a. Note that net income in the current year was only $17,523 compared to prior-year income of $838,955, but net cash flow from operating activities was $236,480 in the current year and a negative $700,957 in the prior year. Explain the causes of this apparent paradox.

b. Evaluate Vermont Teddy Bear's liquidity, solvency, and profitability for the current year using cash flow-based ratios.

Accounting, Analysis, and Principles

UYJ22.4 The income statement for the year ended December 31, 2025, for Laskowski Manufacturing Company contains the following condensed information.

Laskowski Co. Income Statement		
Revenues		$6,583,000
Operating expenses (excluding depreciation)	$4,920,000	
Depreciation expense	880,000	5,800,000
Income before income tax		783,000
Income tax expense		353,000
Net income		$ 430,000

Included in operating expenses is a $24,000 loss resulting from the sale of machinery for $270,000 cash. The company purchased machinery at a cost of $750,000.

Laskowski reports the following balances on its comparative balance sheets at December 31.

Laskowski Co. Comparative Balance Sheets (partial)		
	2025	2024
Cash	$672,000	$130,000
Accounts receivable	775,000	610,000
Inventory	834,000	867,000
Accounts payable	521,000	501,000

Income tax expense of $353,000 represents the amount paid in 2025. Dividends declared and paid in 2025 totaled $200,000.

Accounting

Prepare the statement of cash flows using the indirect method.

Analysis

Laskowski has an aggressive growth plan, which will require significant investments in plant and equipment over the next several years. Preliminary plans call for an investment of over $500,000 in the next year. Compute Laskowski's free cash flow (from Chapter 4) and use it to evaluate the investment plans with the use of only internally generated funds.

Principles

How does the statement of cash flows contribute to achieving the objective of financial reporting?

Developing Your Professional Skills

Critical-Thinking Cases

CT22.1 (LO 2, 4) Writing (Analysis of Improper SCF) The following statement was prepared by Maloney Corporation's accountant.

Maloney Corporation Statement of Sources and Application of Cash For the Year Ended September 30, 2025	
Sources of cash	
Net income	$111,000
Depreciation and depletion	70,000
Increase in long-term debt	179,000
Changes in current receivables and inventories, less current liabilities (excluding current maturities of long-term debt)	14,000
	$374,000
Applications of cash	
Cash dividends	$ 60,000
Expenditure for property, plant, and equipment	214,000
Investments and other uses	20,000
Change in cash	80,000
	$374,000

The following additional information relating to Maloney Corporation is available for the year ended September 30, 2025.

1. Salaries and wages expense attributable to stock option plans was $25,000 for the year.

2.

Expenditures for property, plant, and equipment	$250,000
Proceeds from retirements of property, plant, and equipment	36,000
Net expenditures	$214,000

3. A stock dividend of 10,000 shares of Maloney Corporation common stock was distributed to common stockholders on April 1, 2025, when the per share market price was $7 and par value was $1.

4. On July 1, 2025, when its market price was $6 per share, 16,000 shares of Maloney Corporation common stock were issued in exchange for 4,000 shares of preferred stock.

5.

Depreciation expense	$ 65,000
Depletion expense	5,000
	$ 70,000

6.

Increase in long-term debt	$620,000
Less: Redemption of debt	441,000
Net increase	$179,000

Instructions

a. In general, what are the objectives of a statement of the type shown above for Maloney Corporation? Explain.

b. Identify the weaknesses in the form and format of Maloney Corporation's statement of cash flows without reference to the additional information. (Assume adoption of the indirect method.)

c. For each of the six items of additional information for the statement of cash flows, indicate the preferable treatment and explain why the suggested treatment is preferable.

(AICPA adapted)

CT22.2 (LO 2, 4) Groupwork (SCF Theory and Analysis of Improper SCF) Teresa Ramirez and Lenny Traylor are examining the following statement of cash flows for Pacific Clothing Store's first year of operations.

Pacific Clothing Store Statement of Cash Flows For the Year Ended January 31, 2025	
Sources of cash	
From sales of merchandise	$ 382,000
From sale of common stock	380,000
From sale of investment	120,000
From depreciation	80,000
From issuance of note for truck	30,000
From interest on investments	8,000
Total sources of cash	1,000,000
Uses of cash	
For purchase of fixtures and equipment	330,000
For merchandise purchased for resale	253,000
For operating expenses (including depreciation)	170,000
For purchase of investment	95,000
For purchase of truck by issuance of note	30,000
For purchase of treasury stock	10,000
For interest on note	3,000
Total uses of cash	891,000
Net increase in cash	$ 109,000

Teresa claims that Pacific's statement of cash flows is an excellent portrayal of a superb first year, with cash increasing $109,000. Lenny replies that it was not a superb first year—that the year was an operating failure, the statement was incorrectly presented, and $109,000 is not the actual increase in cash.

Instructions

a. With whom do you agree, Teresa or Lenny? Explain your position.

b. Using the data provided, prepare a statement of cash flows in proper indirect method form. The only noncash items in income are depreciation and the gain from the sale of the investment (purchase and sale are related).

CT22.3 (LO 2, 4) (SCF Theory and Analysis of Transactions) Ashley Company is a young and growing producer of electronic measuring instruments and technical equipment. You have been retained by Ashley to advise it in the preparation of a statement of cash flows using the indirect method. For the fiscal year ended October 31, 2025, you have obtained the following information concerning certain events and transactions of Ashley.

1. The amount of reported earnings for the fiscal year was $700,000, which included a deduction for a loss of $110,000 (see item 5 below).
2. Depreciation expense of $315,000 was included in the income statement.
3. Uncollectible accounts receivable of $40,000 were written off against the allowance for doubtful accounts. Also, $51,000 of bad debt expense was included in determining income for the fiscal year, and the same amount was added to the allowance for doubtful accounts.
4. A gain of $6,000 was realized on the sale of a machine. It originally cost $75,000, of which $30,000 was undepreciated on the date of sale.
5. On April 1, 2025, lightning caused an uninsured building loss of $110,000 ($180,000 loss, less reduction in income taxes of $70,000). This loss was included in determining income as indicated in item 1 above.
6. On July 3, 2025, building and land were purchased for $700,000. Ashley gave in payment $75,000 cash, $200,000 market price of its unissued common stock, and signed a $425,000 mortgage note payable.
7. On August 3, 2025, $800,000 face value of Ashley's 10% convertible debentures was converted into $150,000 par value of its common stock. The bonds were originally issued at face value.

Instructions

Explain whether each of the seven numbered items above is a cash inflow or outflow, and explain how it should be disclosed in Ashley's statement of cash flows for the fiscal year ended October 31, 2025. If any item is neither an inflow nor an outflow of cash, explain why it is not, and indicate the disclosure, if any, that should be made of the item in Ashley's statement of cash flows for the fiscal year ended October 31, 2025.

CT22.4 (LO 2, 4) **Groupwork** **(Analysis of Transactions' Effect on SCF)** Each of the following items must be considered in preparing a statement of cash flows for Cruz Fashions Inc. for the year ended December 31, 2025.

1. Fixed assets that had cost $20,000 6½ years before and were being depreciated on a 10-year basis, with no estimated scrap value, were sold for $4,750.
2. During the year, goodwill of $15,000 was considered impaired and was completely written off to expense.
3. During the year, 500 shares of common stock with a stated value of $25 a share were issued for $32 a share.
4. The company sustained a net loss for the year of $2,100. Depreciation amounted to $2,000 and patent amortization was $400.
5. Uncollectible accounts receivable in the amount of $2,000 were written off against Allowance for Doubtful Accounts.
6. Debt investments (available-for-sale) that cost $12,000 when purchased 4 years earlier were sold for $10,600.
7. Bonds payable with a par value of $24,000 on which there was an unamortized bond premium of $2,000 were redeemed at 101.

Instructions

For each item, state where it is to be shown in the statement and then how you would present the necessary information, including the amount. Consider each item to be independent of the others. Assume that correct entries were made for all transactions as they took place.

CT22.5 (LO 1, 2) **(Purpose and Elements of SCF)** GAAP requires the statement of cash flows be presented when financial statements are prepared.

Instructions

a. Explain the purposes of the statement of cash flows.

b. List and describe the three categories of activities that must be reported in the statement of cash flows.

c. Identify and describe the two methods that are allowed for reporting cash flows from operations.

d. Describe the financial statement presentation of noncash investing and financing transactions. Include in your description an example of a noncash investing and financing transaction.

CT22.6 (LO 1, 2, 3) **Ethics** **(Cash Flow Reporting)** Brockman Guitar Company is in the business of manufacturing top-quality, steel-string folk guitars. In recent years, the company has experienced working capital problems resulting from the procurement of factory equipment, the unanticipated buildup of receivables and inventories, and the payoff of a balloon mortgage on a new manufacturing facility. The founder and president of the company, Barbara Brockman, has attempted to raise cash from various financial institutions, but to no avail because of the company's poor performance in recent years. In particular, the company's lead bank, First Financial, is especially concerned about Brockman's inability to maintain a positive cash position. The commercial loan officer from First Financial told Barbara, "I can't even consider your request for capital financing unless I see that your company is able to generate positive cash flows from operations."

Thinking about the banker's comment, Barbara came up with what she believes is a good plan: With a more attractive statement of cash flows, the bank might be willing to provide long-term financing. To "window dress" cash flows, the company can sell its accounts receivables to factors and liquidate its raw materials inventories. These rather costly transactions would generate lots of cash. As the chief accountant for Brockman Guitar, it is your job to tell Barbara what you think of her plan.

Instructions

Answer the following questions.

a. What are the ethical issues related to Barbara Brockman's idea?

b. What would you tell Barbara Brockman?

FASB Codification References

[1] FASB ASC 230-10-10-2. [Predecessor literature: "The Statement of Cash Flows," *Statement of Financial Accounting Standards No. 95* (Stamford, Conn.: FASB, 1987), paras. 4 and 5.]

[2] FASB ASC 230-10-45-18 through 21. [Predecessor literature: "Statement of Cash Flows—Exemption of Certain Enterprises and Classification of Cash Flows from Certain Securities Acquired for Resale (amended)," *Statement of Financial Accounting Standards No. 102* (February 1989).]

[3] FASB ASC 230-10-45-31. [Predecessor literature: "The Statement of Cash Flows," *Statement of Financial Accounting Standards No. 95* (Stamford, Conn.: FASB, 1987), paras. 27 and 30.]

[4] FASB ASC 230-10-45-25. [Predecessor literature: "Statement of Cash Flows," *Statement of Financial Accounting Standards No. 95* (Stamford, Conn.: FASB, 1987), paras. 107 and 111.]

[5] FASB ASC 230-10-45-14. [Predecessor literature: "Share-Based Payment," *Statement of Financial Accounting Standard No. 123(R)* (Norwalk, Conn.: FASB, 2004), par. 68.]

[6] FASB ASC 320-10-45-11. [Predecessor literature: "Accounting for Certain Investments in Debt and Equity Securities," *Statement of Financial Accounting Standards No. 115* (Norwalk, Conn.: 1993), par. 118.]

[7] FASB ASC 320-10-45-11. [Predecessor literature: "Accounting for Certain Investments in Debt and Equity Securities," *Statement of Financial Accounting Standards No. 115* (Norwalk, Conn.: 1993), par. 118.]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE22.1 Access the glossary ("Master Glossary") to answer the following.

a. What are cash equivalents?

b. What are financing activities?

c. What are investing activities?

d. What are operating activities?

CE22.2 Name five cash inflows that would qualify as a "financing activity."

CE22.3 How should cash flows from purchases, sales, and maturities of available-for-sale debt securities be classified and reported in the statement of cash flows?

CE22.4 Do companies need to disclose information about investing and financing activities that do not affect cash receipts or cash payments? If so, how should such information be disclosed?

Codification Research Case

As part of the year-end accounting process for your company, you are preparing the statement of cash flows according to GAAP. One of your team, a finance major, believes the statement should be prepared to report the change in working capital, because analysts many times use working capital in ratio analysis. Your supervisor would like research conducted to verify the basis for preparing the statement of cash flows.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. What is the primary objective for the statement of cash flows? Is working capital the basis for meeting this objective?

b. How should the information provided in a statement of cash flows help users?

c. List some of the typical cash inflows and outflows from operations.

Additional Professional Resources

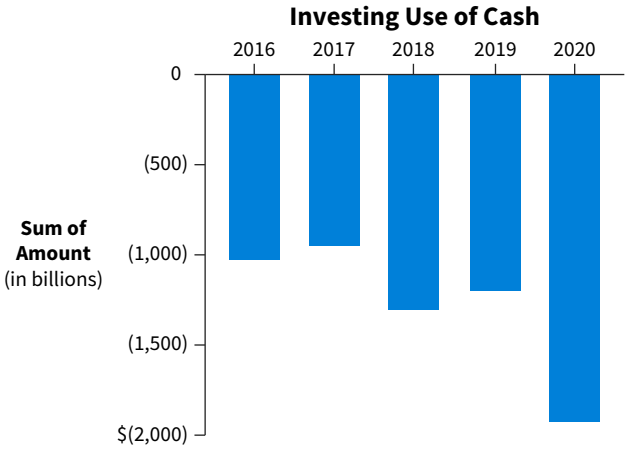
Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

Analytics in Action Activities

Using Data Analytics to Chart Trends in Cash Flows

DA22.1 Investors have access to vast amounts of financial data from public companies, which file with the SEC. Making sense of raw data, however, requires the use of a tool like Excel to help us clean and organize the data, and create visualizations to highlight trends and aid in developing insights.

The following chart summarizes investing cash flow data from several public companies over a 5-year period. Starting with over 28,000 lines of raw data, analytics allows us to summarize and visualize this information. From here, we can analyze trends, develop insights and, most likely, ask better questions!



Required

You are provided with cash flow data from several public companies over a 5-year period. Using Excel, you will organize the data using pivot tables and charts, and answer questions about the trends you observe.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 6

Compare the statement of cash flows under GAAP and IFRS.

As in GAAP, the statement of cash flows is a required statement for IFRS. In addition, the content and presentation of a U.S. statement of cash flows is similar to one used for IFRS. However, the disclosure requirements related to the statement of cash flows are more extensive under GAAP. *IAS* 7 ("Cash Flow Statements") provides the overall IFRS requirements for cash flow information. Following are the key similarities and differences between GAAP and IFRS related to the statement of cash flows.

Similarities

- Both GAAP and IFRS require that companies prepare a statement of cash flows.
- Both IFRS and GAAP require that the statement of cash flows should have three major sections—operating, investing, and financing—along with changes in cash and cash equivalents.

- Similar to GAAP, the cash flow statement can be prepared using either the indirect or direct method under IFRS. For both IFRS and GAAP, most companies use the indirect method for reporting net cash flow from operating activities.
- The definition of cash equivalents used in IFRS is similar to that used in GAAP.

Differences

- A major difference in the definition of cash and cash equivalents is that in certain situations, bank overdrafts are considered part of cash and cash equivalents under IFRS (which is not the case in GAAP). Under GAAP, bank overdrafts are classified as financing activities.
- IFRS requires that non-cash investing and financing activities be excluded from the statement of cash flows. Instead, these non-cash activities should be reported elsewhere. This requirement is interpreted to mean that non-cash investing and financing activities should be disclosed in the notes to the financial statements instead of in the financial statements. Under GAAP, companies may present this information in the cash flow statement.
- One area where there can be substantive differences between IFRS and GAAP relates to the classification of interest, dividends, and taxes. IFRS provides more alternatives for disclosing these items, while GAAP requires that except for dividends paid (which are classified as a financing activity), these items are all reported as operating activities.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

CHAPTER 23

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Full Disclosure in Financial Reporting

WHAT is full disclosure in financial reporting?

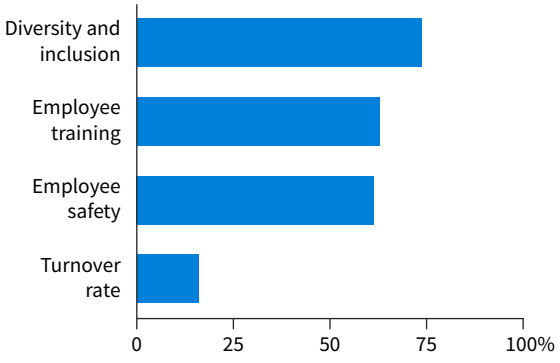
The full disclosure principle states that companies should disclose information that can have a **material** impact on a company's financial results or financial position. The principle does not require the release of every piece of information because that would be impractical and it would overwhelm users of the financial statements. Companies can disclose information directly in the financial statements, such as line-item descriptions in the income statement or balance sheet, or in the notes to the financial statements.

WHY is understanding full disclosure important?

The stability of our capital markets depends heavily on transparency. The full disclosure principle helps limit information asymmetry, in which management is in possession of more information than investors, creditors, and other third parties. Full disclosure also limits opportunities for potentially fraudulent activities.

It's important to understand that interpreting "full disclosure" involves judgment and, for some items, estimates. For example, the revenue recognition principle requires companies to "disclose a breakdown of their revenue in ways that would show investors how economic factors affect the nature, amount, timing, and uncertainty of revenue." However, these guidelines do not mention a specific way of breaking down revenue, and some companies are resisting additional disclosure. For example, the SEC has pushed **Amazon** to disclose how much of its revenue comes from its Amazon Prime customers. Amazon has refused to disclose that information, stating "it didn't believe sales to Prime customers was useful information and that Prime membership is 'only one element' of its business." This is likely to be an area of increased SEC scrutiny in the future.

Companies' Reporting on Human Capital



Source: MyLoglQ.

HOW do companies apply the full disclosure principle?

Some disclosures are fairly routine and do not generate controversy, such as disclosing accounting policies followed and providing further details about the composition of inventory and fixed assets. But there are many "grey" areas, which can be subject to different interpretations, such as disclosing contingencies and possible related parties. A company's auditor plays an important role in ensuring a company has disclosed material information.

It is also critical that companies stay up to date with the latest SEC rules and guidance regarding disclosures. For example, the SEC recently required companies to provide a description of their "human capital resources," which can include things like diversity figures or employee turnover rate (as presented in the adjacent chart). The SEC recently approved a rule that Nasdaq-listed companies must report metrics regarding the diversity of their board of directors.

Sources: M. Rapaport, "What Amazon Isn't Telling Investors About Its Revenue," *Wall Street Journal* (December 22, 2018); and M. Maurer, "Companies Offer Investors a Glimpse at Employee Turnover," *Wall Street Journal* (March 22, 2021).

Chapter Roadmap

LEARNING OBJECTIVES	TOPICS	REVIEW AND PRACTICE
LO 23.1 Review the full disclosure principle and describe how it is implemented.	**23.1 Full Disclosure Principle** • Increase in reporting requirements • Differential disclosure • Notes to the financial statements	
LO 23.2 Discuss the disclosure requirements for related-party transactions, post-balance-sheet events, major business segments, and interim reporting.	**23.2 Disclosure Issues** • Related parties • Post-balance-sheet events • Diversified companies • Interim reports	Examples **23.1** Recognized Subsequent Event **23.2** Nonrecognized Subsequent Events **23.3** Determining Reportable Segments **23.4** Interim Data—Discrete Approach **23.5** Interim Data—Integral Approach Put It into Practice LO 23.2 Prepare Disclosures
LO 23.3 Identify the major disclosures in the auditor's report and understand management's responsibilities for the financial statements.	**23.3 Auditor's and Management's Reports** • Auditor's report • Management's reports	
LO 23.4 Identify reporting issues related to fraudulent financial reporting and financial forecasts.	**23.4 Current Reporting Issues** • Fraudulent financial reporting • Internet financial reporting • Reporting on forecasts and projections • Criteria for accounting and reporting choices	

Go to the **Review and Practice** section at the end of the chapter for a targeted summary review. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available in Wiley Course Resources.

23.1 Full Disclosure Principle

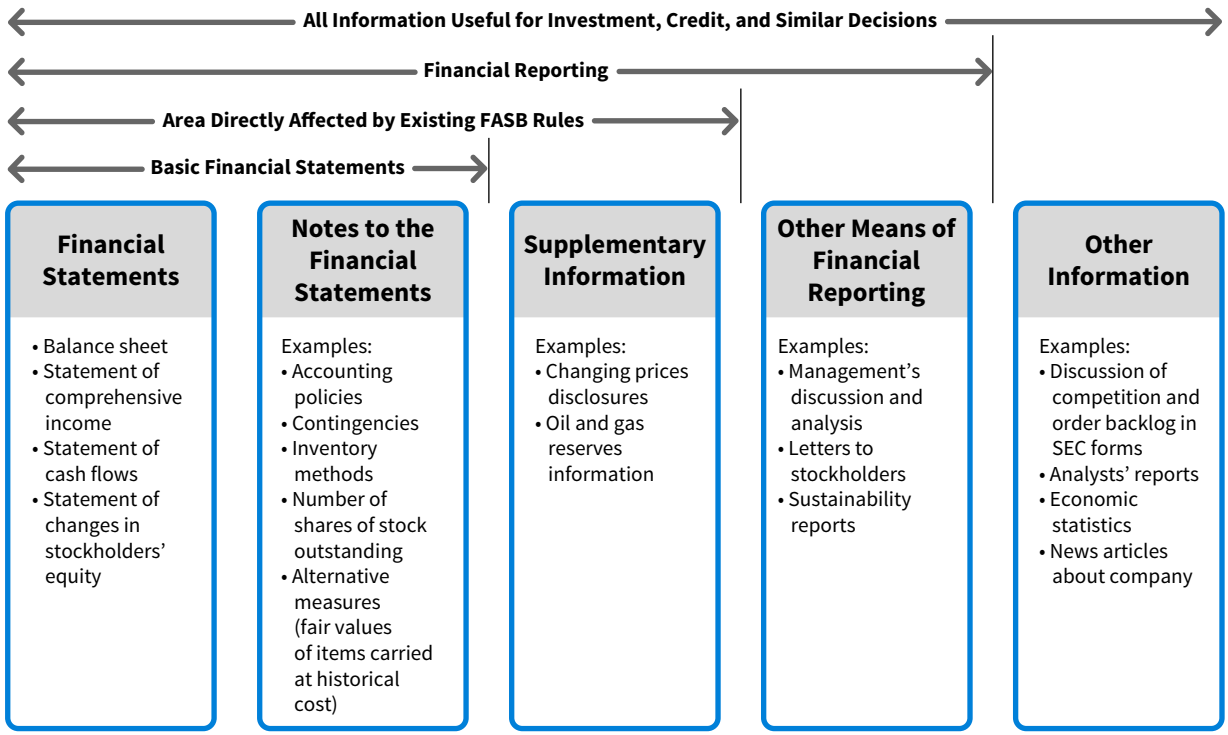
LEARNING OBJECTIVE 1

Review the full disclosure principle and describe how it is implemented.

According to the FASB Conceptual Framework, some useful information is best provided in the financial statements, and some is best provided by other means. For example, earnings and cash flows are readily available in financial statements—but investors might also look at comparisons to other companies in the same industry, found in news articles or brokerage house reports.

FASB rules directly affect financial statements, notes to the financial statements, and supplementary information. Other types of information found in the annual report, such as management's discussion and analysis, are not subject to FASB rules. Illustration 23.1 indicates the various types of financial information.

ILLUSTRATION 23.1 Types of Financial Information


All Information Useful for Investment, Credit, and Similar Decisions
Financial Reporting
Area Directly Affected by Existing FASB Rules
Basic Financial Statements
Financial Statements
• Balance sheet
• Statement of comprehensive income
• Statement of cash flows
• Statement of changes in stockholders' equity
Notes to the Financial Statements
Examples:
• Accounting policies
• Contingencies
• Inventory methods
• Number of shares of stock outstanding
• Alternative measures (fair values of items carried at historical cost)
Supplementary Information
Examples:
• Changing prices disclosures
• Oil and gas reserves information
Other Means of Financial Reporting
Examples:
• Management's discussion and analysis
• Letters to stockholders
• Sustainability reports
Other Information
Examples:
• Discussion of competition and order backlog in SEC forms
• Analysts' reports
• Economic statistics
• News articles about company

As Chapter 1 indicated, the profession has adopted a **full disclosure principle**.

- The full disclosure principle calls for financial reporting of **any financial facts significant enough to influence the judgment of an informed reader**.
- In some situations, the benefits of disclosure may be apparent but the costs uncertain. In other instances, the costs may be certain but the benefits of disclosure not as apparent.

As discussed, the SEC now requires companies to disclose human capital resources, including metrics like employee turnover. Most CFOs already have access to this data, so they do not have to use significant resources to meet the new reporting requirement. Furthermore, the investing community benefits as the new disclosure offers enhanced insight into how well a company is managed.

Now consider disclosures around climate-related risks for public companies. Investors are demanding more mandatory disclosures in this area. Creditors, investors, customers, and even insurers could pass on companies that produce significant greenhouse gasses, posing a significant risk to their business. But what about the cost of these disclosures?

Disney recently indicated that the reporting of certain emissions, namely those produced by its employees, suppliers, and customers related to the use of its products, present a "tremendous challenge" to measure (see **Underlying Concepts**). Some even argue that the reporting requirements are so detailed and substantial that users have a difficult time absorbing the information. These critics charge the profession with engaging in **information overload**.

Financial disasters at **Microstrategy**, **PharMor**, **WorldCom**, and **Theranos** highlight the difficulty of implementing the full disclosure principle. They raise the issue of why investors were not aware of potential problems. Was the information these companies presented not comprehensible? Was it buried? Was it too technical? Was it properly presented and fully disclosed as of the financial statement date, but the situation later deteriorated? Or was it simply not there? In the following sections, we describe the elements of high-quality disclosure that will enable companies to avoid these disclosure pitfalls.

Underlying Concepts

Here is a good example of the trade-off between cost considerations and the benefits of full disclosure.

Increase in Reporting Requirements

Disclosure requirements have increased substantially. One survey showed that the size of many companies' annual reports is growing in response to demands for increased transparency. For example, annual report page counts ranged from 61 pages for **Tootsie Roll** to a much higher count of 194 for **The Coca Cola Company**. One analysis from Moody's Investors Services documented "tremendous growth" in the volume of pages in company annual reports, with 75-page financial statements in the late 1990s, increasing to 120 pages in the early 2000s, and 400 pages in the most recent years. One analyst remarked, "that's very challenging for investors to get through. . . ."[1] This result is not surprising. As illustrated throughout this text, the FASB has issued many pronouncements in recent years that have substantial disclosure provisions.

The reasons for this increase in disclosure requirements are varied. Some of them are listed in **Illustration 23.2**.

ILLUSTRATION 23.2 Reasons for Disclosure Requirements

Reason	Description
Complexity of the business environment	The increasing complexity of business operations magnifies the difficulty of condensing economic events into summarized reports. Such areas as derivatives, leasing, business combinations, pensions, financing arrangements, revenue recognition, and deferred taxes are complex. Companies extensively use **notes to the financial statements** to explain these transactions and their future effects.
Need for timely information	Today, more than ever before, users are demanding information that is current and predictive. For example, users want more complete **interim data**. Also, the SEC recommends enhanced fair value and sustainability disclosures.
Accounting as a control and monitoring device	The government has recently sought public disclosure of such phenomena as management compensation, off-balance-sheet financing arrangements, and related-party transactions. The SEC has selected accountants and auditors as the agents to assist in controlling and monitoring these disclosures.

[1] J. Kroeker, "Disclosure Overhaul May Result in More Footnote Rules for U.S. GAAP," *thomsonreuters.com* (September 28, 2016). Concern about disclosure overload is not confined to financial statements. A recent study of annual proxy statements, which supplement the accounting reports with information on company risks and executive compensation, indicates that the compensation section alone has grown dramatically in recent years. This growth is expected to continue as major new accounting standards are adopted and as companies implement rules to disclose the ratio of chief executive pay relative to the median compensation of employees. See T. Shumsky, "As Company Disclosures Balloon, It's Getting Easier to Bury Information," *Wall Street Journal* (February 26, 2016).

Differential Disclosure

Underlying Concepts

Surveys indicate that users differ in their needs for information and that not all companies should report all elements of information. Thus, some contend that companies should report only information that users and preparers agree is needed in the particular circumstances.

A trend toward **differential disclosure** is also occurring. For example, the SEC requires that companies report to it certain substantive information that is not found in annual reports to stockholders. Likewise, the FASB, recognizing that certain disclosure requirements are costly and unnecessary for certain companies, has eliminated reporting requirements for private (nonpublic) companies in such areas as fair value of financial instruments and segment reporting (see **Underlying Concepts**).

Some still complain that the FASB has not gone far enough. They note that certain types of companies (small or private) should not have to follow complex GAAP requirements such as those for deferred income taxes, leases, or pensions. This issue, often referred to as "**big GAAP versus little GAAP**," continues to be controversial.[2]

The FASB has traditionally taken the position that there should be one set of GAAP. However, due to growing concern about differential costs and benefits of a "one size fits all" reporting package, the FASB has considered providing alternative accounting treatments for private companies in areas that include recognition and measurement, presentation and disclosure, effective dates, and transition methods for financial accounting standards.

- Since 2012, the FASB has worked with the Private Company Council (PCC) to improve the process of setting accounting standards for private companies.
- The PCC uses the Private Company Decision-Making Framework[3] to evaluate whether alternatives to existing GAAP are necessary to address the needs of users of private company financial statements.
- The PCC also provides input to the FASB on the appropriate treatment for private companies for items under active consideration on the FASB's technical agenda.

We provide an expanded discussion of the PCC and private company alternatives in Appendix A.

Analytics in Action: Disclosure—Quantity and Quality…and Visualizations?

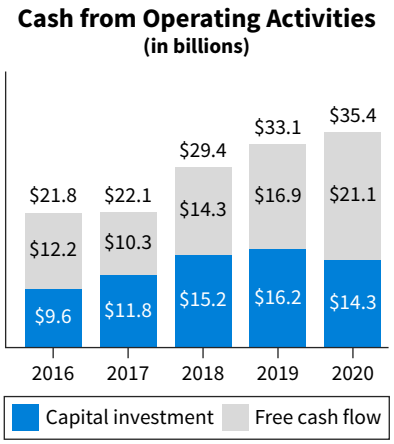
Harry Potter and the Philosopher's Stone has a robust word count of 76,944. The latest Form 10-K filed by **Comcast** with the SEC has a word count of 167,752! Which "novel" would you rather spend a rainy day with? Financial disclosure is a fitting illustration of quality versus quantity. While the full disclosure principle holds that more is better, how much more and in what form?

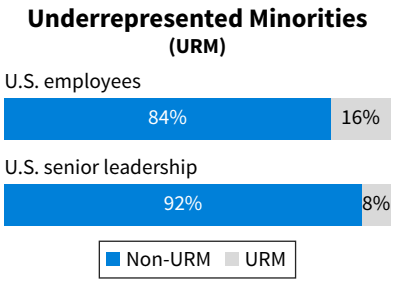
The FASB has responded by initiating a Disclosure Framework project, with the goal of improving the effectiveness of disclosures in notes to financial statements. This project has resulted in a new FASB concepts statement ["Conceptual Framework for Financial Reporting—Chapter 8, Notes to Financial Statements" (August 2018)], which addresses the Board's decision process in identifying disclosures to be considered when setting disclosure requirements for individual accounting standards and evaluating existing disclosure requirements. The FASB observes that reducing the volume of the notes to financial statements is not the primary focus of the Disclosure Framework project but rather a sharper focus on important information to produce higher quality and reduced volume.

One way to balance the investor community's desire for more information in a digestible format is to rely on advances in technology and analytics to present useful financial information more visually. According to a recent study, there has been a dramatic increase in the disclosure of both qualitative and quantitative infographics in 10-K filings since 2003. For example, just take a look at these charts that **Intel** uses in its 10-K filing.

[2] In response to cost-benefit concerns, the SEC has exempted some small public companies from certain rules implemented in response to the Sarbanes-Oxley Act. For example, smaller companies have more time to comply with the internal control rules required by the Sarbanes-Oxley law and have more time to file annual and interim reports.

[3] FASB, *Private Company Decision-Making Framework: A Framework for Evaluating Financial Accounting and Reporting Guidance for Private Companies* (December 2013).





Sources: *FASB News Release*, "FASB Improves the Effectiveness of Disclosures in Notes to Financial Statements" (August 28, 2018); T. Christensen, K. Fronk, J. Lee, and K. Nelson, "Data Visualization in 10-K Filings," *Social Science Research Network* (August 9, 2021); and Intel Corporation 10-K.

Go to the Analytics in Action Activities section at the end of the chapter, which includes Excel-based problems with data sets, to see the relevance and application of data analytics to intermediate accounting topics.

Notes to the Financial Statements

As you know from your study of this text, notes are an integral part of the financial statements of a business. However, readers of financial statements often overlook them because they are highly technical and often appear in small print. **Notes are the means of amplifying or explaining the items presented in the main body of the statements.** They can explain in qualitative terms information pertinent to specific financial statement items. In addition, they can provide supplementary data of a quantitative nature to expand the information in the financial statements. Notes also can explain restrictions imposed by financial arrangements or basic contractual agreements. Although notes may be technical and difficult to understand, they provide meaningful information for the user of the financial statements.[4]

Accounting Policies

Accounting policies are the specific accounting principles and methods a company currently uses and considers most appropriate to present fairly its financial statements. GAAP states that information about the accounting policies adopted by a reporting entity is essential for financial statement users in making economic decisions. Specifically, GAAP recommends that companies should:

- Present as an integral part of the financial statements a statement identifying the accounting policies adopted and followed by the reporting entity.
- Present the disclosure as the first note or in a separate Summary of Significant Accounting Policies section preceding the notes to the financial statements.

The Summary of Significant Accounting Policies section answers such questions as: What method of depreciation is used on plant assets? What valuation method is employed on inventories? What amortization policy is followed in regard to intangible assets? How are marketing costs handled for financial reporting purposes?

Refer to the financial statements and notes to the financial statements for **The Procter & Gamble Company** (available online) for an illustration of note disclosure of accounting policies (Note 1) and other notes accompanying the audited financial statements.

Analysts examine carefully the summary of accounting policies to determine whether a company is using conservative or liberal accounting practices. For example, depreciating plant assets over an unusually long period of time is considered liberal. Using LIFO inventory valuation in a period of inflation is generally viewed as conservative.

[4]"Conceptual Framework for Financial Reporting—Chapter 8, Notes to Financial Statements," *Statement of Financial Accounting Concepts No.* 8 (Norwalk, Conn.: FASB, August 2018).

Common Notes

We have discussed many of the **notes to the financial statements** throughout this text and will discuss others more fully in this chapter. The more common notes are as follows.

Major Disclosures

Inventory. Companies should report the basis upon which inventory amounts are stated (e.g., lower-of-cost-or-net realizable value or lower-of-cost-or-market) and the method used in determining cost (LIFO, FIFO, average-cost, etc.). Manufacturers should report, either in the balance sheet or in a separate schedule in the notes, the inventory composition (finished goods, work in process, raw materials). Unusual or significant financing arrangements relating to inventories that may require disclosure include transactions with related parties, product financing arrangements, firm purchase commitments, involuntary liquidation of LIFO inventories, and pledging of inventories as collateral. Chapters 7 and 8 illustrate these disclosures.

Property, plant, and equipment. Companies should state the basis of valuation for property, plant, and equipment. It is usually historical cost. Companies also should disclose pledges, liens, and other commitments related to these assets. In the presentation of depreciation, companies should disclose the following in the financial statements or in the notes: (1) depreciation expense for the period; (2) balances of major classes of depreciable assets, by nature and function, at the balance sheet date; (3) accumulated depreciation, either by major classes of depreciable assets or in total, at the balance sheet date; and (4) a general description of the method or methods used in computing depreciation with respect to major classes of depreciable assets. Finally, companies should explain any major impairments. Chapter 10 illustrates property, plant, and equipment disclosures.

Creditor claims. Investors normally find it extremely useful to understand the nature and cost of creditor claims. However, the liabilities section in the balance sheet can provide the major types of liabilities only in the aggregate. Note schedules regarding such obligations provide additional information about how a company is financing its operations, the costs that it will bear in future periods, and the timing of future cash outflows. Financial statements must disclose for each of the five years following the date of the statements the aggregate amount of maturities and sinking fund requirements for all long-term borrowings. Chapter 13 illustrates these disclosures.

Equityholders' claims. Many companies present in the body of the balance sheet information about equity securities: the number of shares authorized, issued, and outstanding and the par value for each type of security. Or, companies may present such data in a note. Beyond that, a common equity note disclosure relates to contracts and senior securities outstanding that might affect the various claims of the residual equityholders. An example would be the existence of outstanding stock options, outstanding convertible debt, redeemable preferred stock, and convertible preferred stock. In addition, it is necessary to disclose certain types of restrictions currently in force. Generally, these types of restrictions involve the amount of earnings available for dividend distribution. Examples of these types of disclosures are illustrated in Chapters 14 and 15.

Contingencies and commitments. A company may have gain or loss contingencies that are not disclosed in the body of the financial statements. These contingencies include litigation, debt and other guarantees, possible tax assessments, renegotiation of government contracts, and sales of receivables with recourse. In addition, companies should disclose in the notes commitments that relate to dividend restrictions, purchase agreements (through-put and take-or-pay), hedge contracts, and employment contracts. Disclosures of such items are illustrated in Chapters 6, 8, and 12.

Fair values. Companies that have assets or liabilities measured at fair value must disclose both the cost and the fair value of all financial instruments in the notes to the financial statements. Fair value measurements may be used for many financial assets and liabilities, investments, impairments of long-lived assets, and some contingencies. Companies also provide disclosure of information that enables users to determine the extent of usage of fair value and the inputs used to implement fair value measurement. This fair value hierarchy identifies three broad levels related to the measurement of fair values (Levels 1, 2, and 3). The levels indicate the reliability of the measurement of fair value information. Appendix 16B discusses in detail fair value disclosures.

Revenue. Users carefully review revenue disclosures to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Companies disclose information about (1) contracts with customers, including significant information related to its performance obligations; (2) significant judgments and changes in these judgments that affect the determination of the transaction price, the allocation of the transaction price, and the determination of the timing of revenue; and (3) assets recognized from costs incurred to fulfill contracts, including the amount of amortization recognized and the method used for amortization. See Chapter 17.

Deferred taxes, pensions, and leases. The FASB also requires extensive disclosure in the areas of deferred taxes, pensions, and leases. Chapters 18–20 discuss in detail each of these disclosures. Users of financial statements should carefully read notes to the financial statements for information about these elements and the quality of a company's earnings.

Changes in accounting principles. The profession defines various types of accounting changes and establishes guides for reporting each type. Companies discuss, either in the summary of significant accounting policies or in the other notes, changes in accounting principles (as well as material changes in estimates and corrections of errors). See Chapter 21.

In earlier chapters, we discussed the disclosures listed above. The following sections of this chapter illustrate four additional disclosures of significance—special transactions or events, subsequent events, segment reporting, and interim reporting.

Accounting Matters — What Did You Tweet?

As indicated, footnotes are an integral component of the financial reporting process, necessary to give a complete picture of a company's financial position. For example, **Tesla** discloses that it must meet certain operational and spending requirements under an operating lease arrangement related to a manufacturing facility in New York. Failure to meet those requirements would obligate Tesla to pay a $41 million "program payment" to the lessor.

How can investors keep track of important disclosures like these? Aside from applying all you have learned in this class, there are some other ways to keep fully informed about company disclosures.

One way is to follow the social media feed of @footnoted, a feed run by Michelle Leder who is widely considered an SEC filing expert. In 280 characters or less, Leder carefully dissects SEC filings and alerts investors of potential areas of concern. Recent tweets focused around footnote disclosures from **Peloton Interactive**'s 10-K report, from its increased real estate footprint in Manhattan to the number of pages devoted to risk factors. The author even highlighted a recent SEC filing that took the form of a scanned PDF, making it harder for users to compare two files. Accounting shenanigans? Maybe not, but it emphasizes the need for investors to use all available resources to understand the financial health of a company.

23.2 Disclosure Issues

LEARNING OBJECTIVE 2

Discuss the disclosure requirements for related-party transactions, post-balance-sheet events, major business segments, and interim reporting.

Related-party transactions, post-balance-sheet events, major business segments, and interim reporting can pose especially difficult problems. The accountant/auditor who has responsibility for reporting on these types of transactions must take care to properly balance the rights of the reporting company and the needs of users of the financial statements.

Related Parties

Related-party transactions arise when a company engages in transactions in which one of the parties has the ability to significantly influence the policies of the other. They may also occur when a nontransacting party has the ability to influence the policies of the two transacting parties. Examples of related-party transactions include transactions between:

- A parent company and its subsidiaries.
- Subsidiaries of a common parent.
- A company and trusts for the benefits of employees (controlled or managed by the company).
- A company and its principal owners, management, or members of immediate families, and affiliates.

Competitive, free-market dealings may not exist in related-party transactions, and so an "arm's-length" basis cannot be assumed. Transactions such as borrowing or lending money at abnormally low or high interest rates, real estate sales at amounts that differ significantly from appraised value, exchanges of nonmonetary assets, and transactions involving companies that have no economic substance ("shell corporations") suggest that related parties may be involved.

In order to make adequate disclosure, companies should report the economic substance, rather than the legal form, of these transactions. GAAP requires the following disclosures of material related-party transactions. [1] (See the FASB Codification References near the end of the chapter.)

1. The nature of the relationship(s) involved.
2. A description of the transactions (including transactions to which no amounts or nominal amounts were indicated) for each of the periods for which income statements are presented.
3. The dollar amounts of transactions for each of the periods for which income statements are presented.
4. Amounts due from or to related parties as of the date of each balance sheet presented.

Illustration 23.3, from the annual report of Lyft, shows disclosure of related-party transactions.

ILLUSTRATION 23.3 Disclosure of Related-Party Transactions

Lyft, Inc.

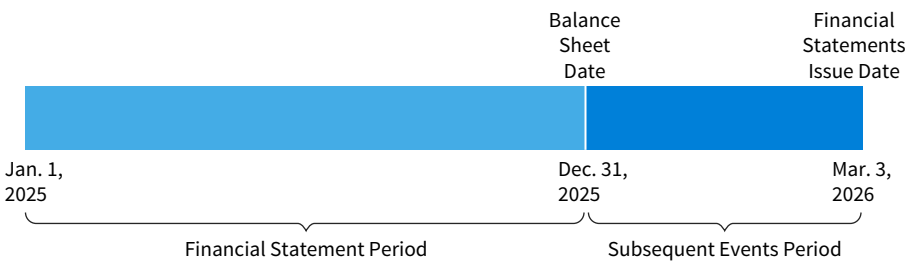
15. Related Party Transactions (in part)

During each of the years ended December 31, 2019 and 2018, the Company purchased certain advertising-related and other services in the amount of $18.1 million and $92.4 million, respectively, from a company that is affiliated with a significant stockholder of the Company. These amounts were recorded to cost of revenue and sales and marketing expenses in the consolidated statements of operations based on the nature of the services. This entity ceased to be a related party in April 2019. During each of the years ended December 31, 2019 and 2018, the Company purchased certain marketing services in the amount of $1.9 million and $4.0 million, respectively, from two companies owned by a significant stockholder of the Company. During the year ended December 31, 2020, the amounts purchased from these related parties as included in the consolidated statement of operations were immaterial.

Post-Balance-Sheet Events (Subsequent Events)

Notes to the financial statements should explain any significant financial events that took place after the formal balance sheet date, but before the statement is issued. These events are referred to as **post-balance-sheet events** or **subsequent events**. Illustration 23.4 shows a time diagram of the subsequent events period.

ILLUSTRATION 23.4 Time Periods for Subsequent Events



A period of several weeks, and sometimes months, may elapse after the end of the fiscal year but before the company issues financial statements. Various activities involved in closing the books for the period and issuing the statements all take time, such as:

- Validating inventory.
- Reconciling subsidiary ledgers with controlling accounts.

- Preparing necessary adjusting entries.
- Ensuring that all transactions for the period have been entered.
- Obtaining an audit of the financial statements by independent certified public accountants.
- Preparing the annual report.

During the period between the balance sheet date and its distribution to stockholders and creditors, important transactions or other events may occur that materially affect the company's financial position or operating situation.

Many who read a balance sheet believe the balance sheet condition is constant, and they project it into the future. However, readers must be told if the company has experienced a significant change—e.g., sold one of its plants, acquired a subsidiary, settled significant litigation, or experienced any other important event in the post-balance-sheet period. Without an explanation in a note, the reader might be misled and draw inappropriate conclusions.

Two types of events or transactions occurring after the balance sheet date may have a material effect on the financial statements or may need disclosure so that readers interpret these statements accurately:

1. **Recognized subsequent events.** Events that provide additional evidence about conditions **that existed** at the balance sheet date, including the estimates inherent in the process of preparing financial statements. These events **require adjustments to the financial statements**. All information available prior to the issuance of the financial statements helps investors and creditors evaluate estimates previously made. To ignore these subsequent events is to pass up an opportunity to improve the accuracy of the financial statements. This first type of event encompasses information that an accountant would have recorded in the accounts had the information been known at the balance sheet date. Some examples include:
   - Settlements of litigation if the events that gave rise to the litigation took place prior to the balance sheet date.
   - Warranty obligations if defects arose on products sold before the balance sheet date.
   - A tax dispute related to taxes payable at the balance sheet date is settled before issuance of the statements.

Example 23.1
Recognized Subsequent Event

FACTS A loss on an accounts receivable results from a customer's bankruptcy subsequent to the balance sheet date but before the financial statements are issued.

QUESTION How should this event be accounted for, if at all?

SOLUTION

The company should adjust the financial statements before their issuance to reflect the loss. The bankruptcy stems from the customer's poor financial health existing at the balance sheet date.

2. **Nonrecognized subsequent events.** Events that provide evidence about conditions that **did not exist** at the balance sheet date but arise subsequent to that date. These events **do not require adjustment of the financial statements**. Some examples include:
   - Strikes.
   - Sales of a bond or capital stock issued.
   - A business combination occurs.
   - Loss contingency related to litigation that arose after the balance sheet date.
   - Losses on receivables resulting from conditions arising after the balance sheet date.
   - Changes in the quoted market prices of securities or foreign exchange rates.
   - Entering into significant commitments or contingent liabilities. [2]

Example 23.2
Nonrecognized Subsequent Events

FACTS A company has a loss from a fire or flood **after** the balance sheet date but before the financial statements are issued.

QUESTION How should this event be accounted for, if at all?

SOLUTION

A fire or flood after the balance sheet date but before the financial statements are issued does not reflect conditions existing at the balance sheet date. Adjustment of the financial statements is not necessary.

Underlying Concepts

A company also should consider supplementing the historical financial statements with pro forma financial data. Occasionally, a nonrecognized subsequent event may be so significant that disclosure can best be made by means of pro forma financial data.

Some nonrecognized subsequent events may have to be disclosed to keep the financial statements from being misleading. For such events, a company discloses the nature of the event and an estimate of its financial effect (see **Underlying Concepts**).[5] **Illustration 23.5** presents an example of a nonrecognized subsequent events disclosure, excerpted from the annual report of **United Airlines**.

ILLUSTRATION 23.5 Disclosure of Subsequent Events

United Airlines, Inc.

NOTE 16. SUBSEQUENT EVENTS (in part)

In December 2019, a novel strain of coronavirus ("COVID-19") was reported in Wuhan, China. The World Health Organization has declared COVID-19 to constitute a "Public Health Emergency of International Concern." On January 30, 2020, the U.S. Department of State issued a Level 4 "do not travel" advisory for China. The U.S. government has also implemented enhanced screenings, quarantine requirements, and travel restrictions in connection with the COVID-19 outbreak. The Company has suspended its flights between the United States and each of Beijing, Chengdu, Shanghai and Hong Kong through April 24, 2020. These routes represented approximately 5% of the Company's 2020 planned capacity and the Company's other trans-Pacific routes represented an additional 10% of the Company's 2020 planned capacity. As of the date of this report, the Company is experiencing an approximately 100% decline in near-term demand to China and an approximately 75% decline in near-term demand on the rest of the Company's trans-Pacific routes. If traffic on the Company's trans-Pacific routes were to remain at these levels for an extended period, and/or routes in other parts of the Company's network begin to see significant declines in demand, our results of operations for full year 2020 may be materially adversely affected.

Many subsequent events or developments do not require adjustment of or disclosure in the financial statements. Typically, these are nonaccounting events or conditions that management normally communicates by other means. These events include legislation, product changes, management changes, unionization, marketing agreements, and loss of important customers.

Reporting for Diversified (Conglomerate) Companies

In certain business climates, companies have a tendency to diversify their operations. Take the case of conglomerate **Comcast Corporation**, which owns **NBC TV**, **Telemundo**, **Universal Pictures**, and **Universal Parks and Resorts**.

[5]The effects from natural disasters, like hurricanes Ida, Katrina, Sandy, and Florence, which occurred after the year-end for companies with August fiscal years, require disclosure in order to keep the statements from being misleading. Some companies had to consider whether these disasters affected their ability to continue as going concerns.

- When businesses are so diversified, investors and investment analysts want more information about the details behind conglomerate financial statements.
- Particularly, they want income statement, balance sheet, and cash flow information on the **individual segments** that compose the total income figure.

Illustration 23.6 shows **segmented,** or disaggregated, financial information from a recent annual report issued by Comcast.

ILLUSTRATION 23.6 Segment Disclosure

Comcast Corporation

NOTE 2. Segment Information (in part)

We are a global media and technology company with three primary businesses: Comcast Cable, NBCUniversal and Sky. We present our operations for (1) Comcast Cable in one reportable business segment, referred to as Cable Communications; (2) NBCUniversal in four reportable business segments: Cable Networks, Broadcast Television, Filmed Entertainment and Theme Parks; and (3) Sky in one reportable business segment.

Our other business interests consist primarily of the operations of Comcast Spectacor, which owns the Philadelphia Flyers and the Wells Fargo Center arena in Philadelphia, Pennsylvania, and other business initiatives, such as Peacock, our new direct-to-consumer streaming service that features NBCUniversal content.

(in millions)	Revenue	Adjusted EBITDA[(b)]	Depreciation and Amortization	Capital Expenditures	Cash Paid for Intangible Assets
2020					
Cable Communications	$ 60,051	$ 25,270	$ 7,753	$ 6,605	$1,333
NBCUniversal					
Cable Networks	10,849	4,616	771	34	24
Broadcast Television	10,244	1,934	163	82	15
Filmed Entertainment	5,276	785	95	13	17
Theme Parks	1,846	(541)	771	1,171	56
Headquarters and Other	121	(521)	478	185	139
Eliminations	(254)	(4)	—	—	—
NBCUniversal	28,082	6,269	2,278	1,485	251
Sky	18,594	1,954	3,034	959	741
Corporate and Other	366	(2,447)	35	130	130
Eliminations	(3,529)	(220)	—	—	—
Comcast Consolidated	**$103,564**	**$30,826**	**$ 13,100**	**$9,179**	**$2,455**

Much information is hidden in the aggregated totals. If analysts have only the consolidated figures, they cannot tell the extent to which the differing product or service lines **contribute to the company's profitability**, **risk**, **and growth potential**. For example, in Illustration 23.6, investors get a better understanding regarding the significance of the Cable Communications segment to Comcast's overall earnings. Segmented reporting provides useful information about a company's business segments and is useful for making an informed investment decision regarding the whole company.[6]

Companies have always been somewhat hesitant to disclose segmented data for various reasons, such as the following.

[6]A classic situation that demonstrates the need for segmented data involved **Caterpillar, Inc**. The SEC cited Caterpillar because it failed to tell investors that nearly a quarter of its income in one year came from a Brazilian unit and was nonrecurring in nature. The company knew that different economic policies in the next year would probably greatly affect earnings of the Brazilian unit. But Caterpillar presented its financial results on a consolidated basis, not disclosing the Brazilian operations. The SEC found that Caterpillar's failure to include information about Brazil left investors with an incomplete picture of the company's financial results and denied investors the opportunity to see the company "through the eyes of management."

Arguments Opposing Segment Reporting
1. Without a thorough knowledge of the business and an understanding of such important factors as the competitive environment and capital investment requirements, the investor may find the segmented information meaningless or may even draw improper conclusions about the reported earnings of the segments.
2. Additional disclosure may be helpful to competitors, labor unions, suppliers, and certain government regulatory agencies, and thus harm the reporting company.
3. Additional disclosure may discourage management from taking intelligent business risks because segments reporting losses or unsatisfactory earnings may cause stockholder dissatisfaction with management.
4. The wide variation among companies in the choice of segments, cost allocation, and other accounting problems limits comparability, and hence the usefulness of segmented information.
5. The investor is investing in the company as a whole and not in the particular segments, and it should not matter how any single segment is performing if the overall performance is satisfactory.
6. Certain technical problems, such as classification of segments and allocation of segment revenues and costs (especially "common costs"), are formidable.

On the other hand, the advocates of segmented disclosures offer these following reasons in support of the practice.

Arguments Supporting Segment Reporting
1. Investors need segmented information to make an intelligent investment decision regarding a diversified company. **a.** Sales and earnings of individual segments enable investors to evaluate the differences between segments in growth rate, risk, and profitability, and to forecast consolidated profits. **b.** Segmented reports help investors evaluate the company's investment worth by disclosing the nature of a company's businesses and the relative size of the components.
2. The absence of segmented reporting by a diversified company may put its unsegmented, single product-line competitors at a competitive disadvantage because the conglomerate may obscure information that its competitors must disclose.

The FASB has concluded that the advocates of segmented disclosures have a stronger case based on the usefulness of segment information to users of financial statements. The objective of reporting segmented financial data is to provide information about the **different types of business activities** in which a company engages and the **different economic environments** in which it operates. Meeting this objective will help users of financial statements do the following.

- Better understand the company's performance.
- Better assess its prospects for future net cash flows.
- Make more informed judgments about the company as a whole.

Financial statements can be disaggregated in several ways. For example, they can be disaggregated by products or services, by geography, by legal entity, or by type of customer. However, it is not feasible to provide all of that information in every set of financial statements.

GAAP requires that general-purpose financial statements include selected information on a single basis of segmentation. A company can meet the segmented reporting objective by **providing financial statements segmented based on how the company's operations are managed.** The method chosen is referred to as the **management approach**. **[3]** The segments are evident from the components of the company's organization structure. These components are called **operating segments**.

Identifying Operating Segments

An **operating segment** is a component of a company:

- That engages in business activities from which it earns revenues and incurs expenses.
- Whose operating results are regularly reviewed by the company's chief operating decision-maker to assess segment performance and allocate resources to the segment.

- For which discrete financial information is available that is generated by or based on the internal financial reporting system.

Companies may aggregate information about two or more operating segments only if the segments have the same basic characteristics in each of the following areas.

1. The nature of the products and services provided.
2. The nature of the production process.
3. The type or class of customer.
4. The methods of product or service distribution.
5. If applicable, the nature of the regulatory environment.

Once the company decides on the possible segments for disclosure, does it have to disclose all of them? Not necessarily. The company performs a quantitative materiality test to determine whether a segment is significant enough to warrant actual disclosure.

Illustration 23.7 indicates the steps for determining if a segment is reportable. Take a moment to review the three steps.

ILLUSTRATION 23.7 Tests for Determining Reportable Segments

Step 1: Does the segment meet *at least one* of the "10% tests?" If yes, it is a reportable segment.

Revenue: Sales to both external customers and intersegment sales is 10% or more of the combined revenue of all operating segments.	**Profit or Loss:** The absolute amount of its profit or loss is 10% or more of the greater, in absolute amount, of (a) The combined **profit** of all operating segments that did **not** incur a loss, or (b) the combined **loss** of all operating segments that did report a loss.	**Assets:** The identifiable assets are 10% or more of the combined assets of all operating segments.

Step 2: Do the reportable segments explain a significant portion of the company's business?

The segmented results must equal **at least** 75% of the combined sales to unaffiliated customers for the entire company.

Step 3: Are too many segments being reported?

Reporting too many segments may overwhelm users with detailed information. The FASB decided that 10 is a reasonable upper limit for the number of segments that a company must disclose.[7]

Example 23.3 Determining Reportable Segments

FACTS Watson Industries has identified the following six possible reporting segments (amounts in thousands).

Segments	Total Revenue (Unaffiliated)	Operating Profit (Loss)	Identifiable Assets
A	$ 100	$10	$ 60
B	50	2	30
C	700	40	390
D	300	20	160
E	900	18	280
F	100	(5)	50
	$2,150	$85	$970

[7]According to a recent study by Deloitte, segment reporting issues are one of the five top SEC comment letter topics. For example, **PowerSecure** received a $500,000 fine for failure to adequately identify reportable segments [S. Quinlivan, "SEC Charges Issuer with Inadequate Segment Reporting," *Dodd-Frank.com* (November 7, 2016)]. In response to these segment reporting challenges, the FASB is conducting a study of segment aggregation criteria and disclosures to provide users with more decision-useful information about the reportable segments, including new approaches to identifying reportable segments (see the FASB website; click on Projects and then Presentation and Disclosure).

QUESTION Which segments should be disclosed as reporting segments?

SOLUTION

Watson would apply the steps as follows.

Step 1: Which segments meet at least one of the 10% tests?

Revenue test: .10 × $2,150 total revenue = $215; C, D, and E meet this test.

Operating profit (loss) test: .10 × $90 total profit = $9 (note that the $5 loss is ignored because the test is based on non-loss segments); A, C, D, and E meet this test.

Identifiable assets tests: .10 × $970 total assets = $97; C, D, and E meet this test.

The reporting segments are therefore A, C, D, and E, assuming that these four segments have enough sales to meet the 75% of combined sales test.

Step 2: Do the reportable segments meet the 75% test?

75% of combined sales test: .75 × $2,150 = $1,612.50. The sales of A, C, D, and E total $2,000 ($100 + $700 + $300 + $900); therefore, the 75% test is met.

Step 3: Are too many segments being reported?

Watson is only reporting four segments (A, C, D, and E) which is well below the maximum of ten recommended by the FASB.

Measurement Principles

The accounting principles that companies use for segment disclosure need not be the same as the principles they use to prepare the consolidated statements. This flexibility may at first appear inconsistent. But, preparing segment information in accordance with GAAP would be difficult because some principles are not expected to apply at a segment level. Examples are accounting for the cost of company-wide employee benefit plans, accounting for income taxes in a company that files a consolidated tax return, and accounting for inventory on a LIFO basis if the pool includes items in more than one segment.

The FASB does not require allocations of joint, common, or company-wide costs solely for external reporting purposes. **Common costs** are those incurred for the benefit of more than one segment and whose interrelated nature prevents a completely objective division of costs among segments. For example, the company president's salary is difficult to allocate to various segments. Allocations of common costs are inherently arbitrary and may not be meaningful. There is a presumption that if companies allocate common costs to segments, these allocations are either directly attributable or reasonably allocable.

Segmented Information Reported

The FASB requires that a company report the following.

1. **General information about its operating segments.** This includes factors that management considers most significant in determining the company's operating segments, and the types of products and services from which each operating segment derives its revenues.
2. **Segment profit and loss and related information.** Specifically, companies must report the following information about each operating segment **if the amounts are included in determining segment profit or loss**.
   - Commonly reported elements include:
     a. Revenues from transactions with external customers.
     b. Depreciation, depletion, and amortization expense.
   - Other information, which may be included in segment profit and loss and should be reported, includes:
     a. Revenues from transactions with other operating segments of the same company.
     b. Interest revenue and interest expense.
     c. Unusual and infrequent items.

d. Equity in the net income of investees accounted for by the equity method.

e. Income tax expense or benefit.

f. Significant noncash items other than depreciation, depletion, and amortization expense.

3. **Segment assets.** A company must report each operating segment's total assets.
4. **Reconciliations.** A company must provide a reconciliation of the total of the segments' revenues to total revenues, a reconciliation of the total of the operating segments' profits and losses to its income before income taxes, and a reconciliation of the total of the operating segments' assets to total assets.
5. **Information about products and services and geographic areas.** For each operating segment not based on geography, the company must report (unless it is impracticable): (1) revenues from external customers, (2) long-lived assets, and (3) expenditures during the period for long-lived assets. This information, if material, must be reported (a) in the company's country of domicile and (b) in each other country.
6. **Major customers.** If 10% or more of company revenue is derived from a single customer, the company must disclose the total amount of revenue from each such customer by segment.

Illustration 23.8 shows the segment disclosure for **Johnson & Johnson**.

ILLUSTRATION 23.8 Segment Disclosure

Johnson & Johnson

Segments of Business and Geographic Areas

	Sales to Customers	
(Dollars in Millions)	**2020**	**2019**
Consumer Health—United States	$ 6,362	$ 5,839
International	7,691	8,059
Worldwide	14,053	13,898
Pharmaceutical—United States	25,735	23,874
International	19,837	18,324
Worldwide	45,572	42,198
Medical Devices—United States	11,036	12,384
International	11,923	13,579
Worldwide	22,959	25,963
Worldwide total	$82,584	$82,059

Segment revenues

	Income (Loss) Before Tax		Identifiable Assets	
(Dollars in Millions)	**2020**	**2019**	**2020**	**2019**
Consumer Health	$ (1,064)	$ 2,061	$ 27,355	$ 26,618
Pharmaceutical	15,462	8,816	66,158	56,292
Medical Devices	3,044	7,286	49,578	49,462
Total	17,442	18,163	143,091	132,372
Less: Expense not allocated to segments (1)	945	835		
General corporate (2)			31,803	25,356
Worldwide total	$16,497	$17,328	$174,894	$157,728

Segment profit, segment assets

	Additions to Property, Plant & Equipment		Depreciation and Amortization	
(Dollars in Millions)	**2020**	**2019**	**2020**	**2019**
Consumer Health	$ 248	$ 328	$ 785	$ 765
Pharmaceutical	863	950	4,006	3,910
Medical Devices	1,980	1,912	2,140	2,014
Segments total	3,091	3,190	6,931	6,689
General corporate	256	308	300	320
Worldwide total	$3,347	$3,498	$7,231	$7,009

Information on property, plant, and equipment

ILLUSTRATION 23.8 (continued)

Geographic information

	Sales to Customers		Long-Lived Assets	
(Dollars in Millions)	**2020**	**2019**	**2020**	**2019**
United States	$43,133	$42,097	$ 49,951	$ 41,528
Europe	18,980	18,466	49,363	48,015
Western Hemisphere excluding U.S.	5,335	5,941	2,734	2,862
Asia-Pacific, Africa	15,136	15,555	5,484	5,486
Segments total	82,584	82,059	107,532	97,891
General corporate			1,029	1,049
Other non long-lived assets			66,333	58,788
Worldwide total	$82,584	$82,059	$174,894	$157,728

Interim Reports

Underlying Concepts

For information to be relevant, it must be available to decision-makers before it loses its capacity to influence their decisions (timeliness). Interim reporting is an excellent example of this concept.

Another source of information for the investor is interim reports. **Interim reports** cover periods of less than one year. The stock exchanges, the SEC, and the accounting profession have an active interest in the presentation of interim information.

Interim reporting by public companies on a quarterly basis is a well-established and accepted practice. Analysts and investors want financial information as soon as possible, before it is old news (see **Underlying Concepts**). However, quarterly reporting is not without critics. Today, many contend that U.S. management is too oriented to the short-term. The truth of this statement is echoed by the words of the president of a large company who decided to retire early: "I wanted to look forward to a year made up of four seasons rather than four quarters." While some are calling for the SEC to eliminate all interim reporting requirements in response to the negative consequences of short-termism, others are calling for a common sense approach, encouraging standard-setters to consider both costs and benefits.

The SEC mandates that certain companies file a **Form 10-Q**, in which a company discloses quarterly data similar to that disclosed in the annual report. It also requires those companies to disclose selected quarterly information in notes to the annual financial statements. **Illustration 23.9** presents the selected quarterly disclosure of **Tootsie Roll**.

ILLUSTRATION 23.9 Disclosure of Selected Quarterly Data

Tootsie Roll Industries, Inc.
For the Year Ended December 31, 2020

(Thousands of dollars except per share data)

	First	**Second**	**Third**	**Fourth**	**Total**
Net product sales	$102,803	$79,796	$156,962	$127,866	$467,427
Product gross margin	36,360	29,417	57,775	44,165	167,717
Net earnings	11,982	7,388	24,673	14,952	58,995
Net earnings per share	0.18	0.11	0.37	0.23	0.89

	Stock Prices 2020		**Dividends 2020**
	High	**Low**	
1st Qtr	$37.54	$32.00	$0.09
2nd Qtr	39.23	32.71	0.09
3rd Qtr	34.37	29.07	0.09
4th Qtr	32.47	29.42	0.09

In addition to Form 10-Q, GAAP narrows the reporting alternatives related to interim reports. **[4]**

Interim Reporting Requirements

Generally, companies should use the same accounting principles for interim reports and for annual reports. They should recognize revenues in interim periods on the same basis as they are for annual periods. For example, if Cedars Corp. uses the percentage-of-completion method as the basis for recognizing revenue on an annual basis, then it should use the percentage-of-completion basis for interim reports as well. Also, Cedars should treat costs directly associated with revenues (product costs, such as materials, labor and related fringe benefits, and manufacturing overhead) in the same manner for interim reports as for annual reports.

Companies should use the same inventory pricing methods (FIFO, LIFO, etc.) for interim reports and for annual reports. However, the following exceptions are appropriate at interim reporting periods.

1. Companies may use the gross profit method for interim inventory pricing. But they must disclose the method and adjustments to reconcile with annual inventory.
2. When a company liquidates LIFO inventories at an interim date and expects to replace them by year-end, cost of goods sold should include the expected cost of replacing the liquidated LIFO base, rather than give effect to the interim liquidation.
3. Companies should not defer inventory market declines beyond the interim period unless they are temporary and no loss is expected for the fiscal year.
4. Companies ordinarily should defer planned variances under a standard cost system; such variances are expected to be absorbed by year-end.

Companies often charge to the interim period, as incurred, costs and expenses other than product costs, referred to as **period costs**. But companies may allocate these costs among interim periods on the basis of an estimate of time expired, benefit received, or activity associated with the periods. Companies display considerable latitude in accounting for these costs in interim periods, and many believe more definitive guidelines are needed.

Regarding disclosure, companies should report the following interim data at a minimum.

1. Sales or gross revenues, provision for income taxes, and net income.
2. Basic and diluted earnings per share where appropriate.
3. Seasonal revenue, cost, or expenses.
4. Significant changes in estimates or provisions for income taxes.
5. Disposal of a component of a business, and unusual or infrequently occurring items.
6. Contingent items.
7. Changes in accounting principles or estimates.
8. Significant changes in financial position.

The FASB encourages, but does not require, companies to publish an interim balance sheet and statement of cash flows. If a company does not present this information, it should disclose significant changes in such items as liquid assets, net working capital, long-term liabilities, and stockholders' equity.

Unique Problems of Interim Reporting

Because of the short-term nature of the information in interim reports, there is considerable controversy as to the general approach companies should employ. Currently, the two primary approaches are as follows.

1. **Discrete approach**. Companies should treat each interim period as a separate accounting period. Using that treatment, companies would follow the principles for deferrals and accruals used for annual reports. In this view, companies should report accounting transactions as they occur, and expense recognition should not change with the period of time covered.
2. **Integral approach**. Companies should treat the interim report as an integral part of the annual report and deferrals and accruals should take into consideration what will happen for the entire year. In this approach, companies should assign estimated expenses to parts of a year on the basis of sales volume or some other activity base.

Many companies follow the discrete approach for certain types of expenses and the integral approach for others, given the standards currently employed in practice are vague and lead to differing interpretations. Current GAAP reflects a preference for the integral approach. However, within this broad guideline, a number of unique reporting problems develop related to the following items.

Advertising and Similar Costs The general guidelines are that companies should defer in an interim period costs such as advertising if the benefits extend beyond that period; otherwise, the company should expense those costs as incurred. But such a determination is difficult, and even if the company defers the costs, how should it allocate them between quarters?

Because of the vague guidelines in this area, accounting for advertising varies widely. At one time, some companies in the food industry, such as **RJR Nabisco** and **Pillsbury**, charged advertising costs as a percentage of sales and adjusted to actual at year-end, whereas **General Foods** and **Kellogg's** expensed these costs as incurred.

The same type of problem relates to such items as Social Security taxes, research and development costs, and major repairs. For example, should the company expense Social Security costs, which are subject to a wage cap, (payroll taxes) on highly paid personnel early in the year, or allocate and spread them to subsequent quarters? Should a major repair that occurs later in the year be anticipated and allocated proportionately to earlier periods?

Expenses Subject to Year-End Adjustment Companies often do not know with a great deal of certainty amounts of bad debts, executive bonuses, pension costs, and inventory shrinkage until year-end. **They should estimate these costs and allocate them to interim periods as best they can.** Companies use a variety of allocation techniques to accomplish this objective.

Income Taxes Not every dollar of corporate taxable income is taxed at the same rate; the tax rate structure is progressive. This aspect of business income taxes poses a problem in preparing interim financial statements. Should the company use the **annualized approach**, which is to annualize income to date and accrue the proportionate income tax for the period to date? Or should it follow the **marginal principle approach**, which is to apply the lower rate of tax to the first amount of income earned? At one time, companies generally followed the latter approach and accrued the tax applicable to each additional dollar of income.

The profession now, however, uses an **annualized approach**. This requires that "at the end of each interim period the company should make its best estimate of the effective tax rate expected to be applicable for the full fiscal year. The rate so determined should be used in providing for income taxes on income for the quarter." **[5]**[8]

Because businesses did not uniformly apply this guideline in accounting for similar situations, the FASB issued authoritative guidance. GAAP requires companies, when computing the year-to-date tax, to apply the **estimated annual effective tax rate** to the year-to-date "ordinary" income at the end of each interim period. Further, the **interim period tax** related to "ordinary" income shall be the difference between the amount so computed and the amounts reported for previous interim periods of the fiscal period. **[6]**[9]

Earnings per Share (EPS) Interim reporting of EPS has all the problems inherent in computing and presenting annual EPS, and then some. If a company issues shares in the third period, EPS for the first two periods will not reflect year-end EPS. For purposes of computing EPS and making the required disclosure determinations, each interim period should stand alone. That is, all applicable tests should be made for that single period.

Seasonality **Seasonality** occurs when most of a company's sales occur in one short period of the year while certain costs are fairly evenly spread throughout the year. For example, the natural gas industry has its heavy sales in the winter months. In contrast, the beverage industry has its heavy sales in the summer months.

The problem of seasonality is related to the expense recognition principle in accounting. Generally, expenses are associated with the revenues they create. In a seasonal business, wide

[8] As discussed in Chapter 18, the Tax Cuts and Jobs Act (TCJA) of 2017 enacted a flat federal tax rate of 21%. However, state, local, and some foreign tax rates follow a graduated (progressive) schedule. The estimated annual effective tax rate should reflect anticipated tax credits, foreign tax rates, percentage depletion, capital gains rates, and other available tax-planning alternatives.

[9] "Ordinary" income (or loss) refers to income (or loss) from operations or income (or loss) from continuing operations, when discontinued operations are involved.

fluctuations in profits occur because off-season sales do not absorb the company's fixed costs, such as manufacturing, selling, and administrative costs that tend to remain fairly constant regardless of sales or production.

To illustrate why seasonality is a problem, assume the information shown in **Illustration 23.10** for Landry Company, who manufacturers disposable hand warmers.

ILLUSTRATION 23.10 Data for Landry Seasonality Example

Selling price per unit	$1
Annual sales for the period (projected and actual)	
100,000 units @ $1	$100,000
Manufacturing costs	
Variable	10¢ per unit
Fixed	20¢ per unit or $20,000 for the year
Nonmanufacturing, costs	
Variable	10¢ per unit
Fixed	30¢ per unit or $30,000 for the year

Illustration 23.11 presents Landry's sales for four quarters and the year (projected and actual).

ILLUSTRATION 23.11 Sales Data for Landry Seasonality Example

		Percent of Sales
1st quarter	$ 20,000	20%
2nd quarter	5,000	5
3rd quarter	10,000	10
4th quarter	65,000	65
Total for the year	$100,000	100%

Using the information for Landry Company, let's prepare interim information.

Example 23.4 Interim Data—Discrete Approach

FACTS Landry Company manufactures disposable hand warmers. Data for Landry are presented in Illustrations 23.10 and 23.11.

QUESTION What is the interim net income information for Landry using the discrete approach?

SOLUTION

Under the discrete approach, Landry reports accounting transactions as they occur. The following table illustrates the discrete approach.

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
Sales	$20,000	$ 5,000	$10,000	$65,000	$100,000
Manufacturing costs					
Variable	(2,000)	(500)	(1,000)	(6,500)	(10,000)
Fixed[a]	(4,000)	(1,000)	(2,000)	(13,000)	(20,000)
	14,000	3,500	7,000	45,500	70,000
Nonmanufacturing costs					
Variable	(2,000)	(500)	(1,000)	(6,500)	(10,000)
Fixed[b]	(7,500)	(7,500)	(7,500)	(7,500)	(30,000)
Net income	$ 4,500	$(4,500)	$(1,500)	$31,500	$ 30,000

[a]The fixed manufacturing costs are inventoried, so that equal amounts of fixed costs do not appear during each quarter.

[b]The fixed nonmanufacturing costs are not inventoried, so equal amounts of fixed costs appear during each quarter.

An investor who uses the first quarter's results from Example 23.4 might be misled. If the first quarter's earnings are $4,500, should this figure be multiplied by four to predict annual earnings of $18,000? Or, if first-quarter sales of $20,000 are 20% of the predicted sales for the year, would the net income for the year be $22,500 ($4,500 × 5)? Both figures are obviously wrong. After the second quarter's results occur, the investor may become even more confused.

The problem with the discrete approach is that the fixed nonmanufacturing costs are not charged in proportion to sales. Some companies have adopted a way of avoiding this problem by making all fixed nonmanufacturing costs follow the sales pattern, as shown in Example 23.5.

Example 23.5
Interim Data—Integral Approach

FACTS Landry Company manufactures disposable hand warmers. Data for Landy are presented in Illustrations 23.10 and 23.11.

QUESTION What is the interim net income information for Landry using the integral approach?

SOLUTION

Under the integral approach, Landry assigns fixed nonmanufacturing costs on the basis of sales volume. For example, the first quarter represents 20% of sales for the year. Therefore, 20% of the fixed nonmanufacturing costs, or $6,000 ($30,000 × .20), should be allocated to the first quarter. The following table illustrates the integral approach.

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
Sales	$20,000	$ 5,000	$10,000	$65,000	$100,000
Manufacturing costs					
Variable	(2,000)	(500)	(1,000)	(6,500)	(10,000)
Fixed	(4,000)	(1,000)	(2,000)	(13,000)	(20,000)
	14,000	3,500	7,000	45,500	70,000
Nonmanufacturing costs					
Variable	(2,000)	(500)	(1,000)	(6,500)	(10,000)
Fixed	(6,000)	(1,500)	(3,000)	(19,500)	(30,000)
Net income	$ 6,000	$ 1,500	$ 3,000	$19,500	$ 30,000

Global View

IFRS requires that interim financial statements use the discrete method, except for tax expenses. *See the IFRS Insights at the end of the chapter for a discussion of the similarities and differences between IFRS and GAAP.*

The integral approach, as shown in Example 23.5, solves some of the seasonality problems of interim reporting. Sales in the first quarter are 20% of total sales for the year, and net income in the first quarter is 20% of total income. In this case, as in the previous example, the investor cannot rely on multiplying any given quarter by four but can use comparative data or rely on some estimate of sales in relation to income for a given period.

The greater the degree of seasonality experienced by a company, the greater the possibility of distortion. Because there are no definitive guidelines for handling such items as the fixed nonmanufacturing costs, variability in income can be substantial. To alleviate this problem, the profession recommends that companies subject to material seasonal variations disclose the seasonal nature of their business and consider supplementing their interim reports with information for 12-month periods ended at the interim date for the current and preceding years (see **Global View**).

Put It into Practice LO 23.2
Prepare Disclosures

FACTS Konetzke Corporation, a publicly traded company, is preparing the interim financial data which it will issue to its stockholders and the Securities and Exchange Commission (SEC) for the fiscal year ending December 31, 2025. Your job as a member of the accounting team is to help determine the appropriate disclosures and any other potential year-end adjustments. You have collected the following information.

1. Konetzke is involved in four separate industries. The following information is available for each of the four industries. Konetzke wonders which segments are reportable.

Operating Segment	Total Revenue	Operating Profit (Loss)	Identifiable Assets
Badger	$ 60,000	$15,000	$167,000
Spartan	10,000	1,500	83,000
Cornhusker	23,000	(2,000)	21,000
Hawkeye	9,000	1,000	19,000
	$102,000	$15,500	$290,000

2. On February 3, 2026, one of Konetzke's customers declared bankruptcy. At December 31, 2025, this company owed Konetzke $15,000, of which $3,000 was paid in January 2026.

3. On January 18, 2026, one of the three major plants of the client burned down.
4. On January 23, 2026, a strike was called at one of Konetzke's largest plants, which halted 30% of its production. As of today (February 13), the strike has not been settled.
5. On February 1, 2026, the board of directors adopted a resolution accepting the offer of an investment banker to guarantee the marketing of $1,200,000 of preferred stock.

INSTRUCTIONS

a. State in each case how the 2025 financial statements would be affected, if at all.

b. Moving ahead to the first quarter of 2026, your team has compiled the following summarized revenue and expense data for the first quarter of the year.

Sales revenue	$30,000
Cost of goods sold	18,000
Variable selling expenses	500
Fixed selling expenses	1,500

Included in the fixed selling expenses was the single lump-sum payment of $800 for Internet advertisements for the entire year. Address the following with respect to the first quarter report. (1) Explain whether Konetzke should report its operating results for the quarter as if the quarter were a separate reporting period in and of itself, or as if the quarter were an integral part of the annual reporting period. (2) State how the sales revenue, cost of goods sold, and fixed selling expenses would be reflected in Konetzke's quarterly report prepared for the first quarter of 2026.

SOLUTION

a. 1. Konetzke first conducts the following three tests:

Revenue test: $.10 \times \$102{,}000 = \$10{,}200$. The Badger ($60,000) and Cornhusker ($23,000) segments both meet this test.

Operating profit (loss) test: $.10 \times (\$15{,}000 + \$1{,}500 + \$1{,}000) = \$1{,}750$. The Badger ($15,000) and Cornhusker ($2,000 absolute amount) segments both meet this test.

Identifiable assets test: $.10 \times \$290{,}000 = \$29{,}000$. The Badger ($167,000) and Spartan ($83,000) segments both meet this test.

Thus, Konetzke has three reportable segments (Badger, Spartan, and Cornhusker), for which segment information should be disclosed.

Regarding the post-balance-sheet events:

2. The financial statements should be adjusted for the expected loss pertaining to the remaining receivable of $12,000. Such adjustment should reduce accounts receivable to their realizable value as of December 31, 2025.

3. Report the fire loss in a footnote to the balance sheet and refer to it in connection with the income statement, since earnings power is presumably affected.

4. Strikes are considered general knowledge and therefore disclosure is not required. Many auditors, however, would encourage disclosure in all cases.

5. Report the action of the new stock issue in a footnote to the balance sheet.

b. 1. The company should report its quarterly results as if each interim period is an integral part of the annual period.

2. The company's revenue and expenses would be reported as follows on its quarterly report prepared for the first quarter of 2026.

Sales revenue	$30,000
Cost of goods sold	18,000
Variable selling expenses	500
Fixed selling expenses	
Advertising ($800 ÷ 4)	200
Other ($1,500 − $800)	700

Sales revenue and cost of goods sold receive the same treatment as if this were an annual report. Costs and expenses other than product costs should be charged to expense in interim periods as incurred or allocated among interim periods. Consequently, the variable selling expenses and the portion of fixed selling expenses not related to Internet advertising should be reported in full. One-fourth of the Internet advertising is reported as an expense in the first quarter, assuming the advertising is constant throughout the year. These costs can be deferred within the fiscal period if the benefits of the expenditure clearly extend beyond the interim period in which the expenditure is made.

23.3 Auditor's and Management's Reports

LEARNING OBJECTIVE 3

Identify the major disclosures in the auditor's report and understand management's responsibilities for the financial statements.

Auditor's Report

Another important source of information, which is often overlooked, is the **auditor's report**. An **auditor** is an accounting professional who conducts an independent examination of a company's accounting data.

If satisfied that the financial statements present the financial position, results of operations, and cash flows fairly in accordance with generally accepted accounting principles, the auditor expresses an **unqualified opinion**. An example is shown in Illustration 23.12.[10]

ILLUSTRATION 23.12 Auditor's Report

To the Board of Directors and Shareholders of NIKE, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting (in part)

We have audited the accompanying consolidated balance sheets of NIKE, Inc. and its subsidiaries (the "Company") as of May 31, 2021 and 2020, and the related consolidated statements of income, of comprehensive income, of shareholders' equity and of cash flows for each of the three years in the period ended May 31, 2021, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of May 31, 2021, based on criteria established in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of May 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended May 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of May 31, 2021, based on criteria established in *Internal Control—Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

[10]This audit report conforms to the PCAOB standard on the audit report [*The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion* (PCAOB Release No. 2017-001, June 1, 2017)]. The audit report for private companies is governed by auditing standards issued by the AICPA [See AU-C Section 700, "Forming an Opinion and Reporting on Financial Statements," *Statement on Auditing Standards No. 122*. Effective for audits of financial statements for periods ending on or after December 31, 2013. Predecessor literature: "Reports on Audited Financial Statements," *Statement on Auditing Standards No. 58* (New York: AICPA, 1988).] Notable differences for public companies under the PCAOB rules relate to (1) identification of the engagement partner; (2) auditor tenure (how long the auditor has served this client); (3) guidance on auditor reporting on supplemental information, interim financial information, and special reports; and (4) auditor communication of Critical Audit Matters (CAMs).

ILLUSTRATION 23.12 (continued)

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accounting for Income Taxes

As described in Notes 1 and 9 to the consolidated financial statements, the Company recorded income tax expense of $934 million for the year ended May 31, 2021, and has net deferred tax assets of $1,133 million, including a valuation allowance of $12 million, and total gross unrecognized tax benefits, excluding related interest and penalties, of $896 million as of May 31, 2021, $609 million of which would affect the Company's effective tax rate if recognized in future periods. The realization of deferred tax assets is dependent on future taxable earnings. Management assesses the scheduled reversal of deferred tax liabilities, projected future taxable income and available tax planning strategies and considers foreign tax credit utilization in making this assessment of realization. A valuation allowance is established against the net deferred tax asset to the extent that recovery is not likely. The Company is subject to taxation in the United States, as well as various state and foreign jurisdictions.

The principal considerations for our determination that performing procedures relating to the accounting for income taxes is a critical audit matter are the high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence relating to (i) management's assessment of complex tax laws and regulations, including recent court rulings, as it relates to determining the provision for income taxes and other tax positions, and (ii) management's assessment of realizability of deferred tax assets, specifically around future taxable income, foreign tax credit utilization and available tax planning strategies. In addition, the audit effort involved the use of professionals with specialized skill and knowledge.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
July 20, 2021

We have served as the Company's auditor since 1974.

Notice in Illustration 23.12 there is a section of the auditor's report titled **critical audit matters (CAMs)**. This is the newest section of the report that has been required since 2019. A CAM is any audit matter that was communicated or required to be communicated to the audit committee of the company's board of directors. The rationale is that if a matter is being communicated to the audit committee, it must be important and should be made available to users of the financial statements. A CAM relates to accounts or disclosures that are material to the financial statements and involves especially challenging, subjective, or complex auditor judgment.

In preparing the report, the auditor follows these reporting standards.

1. The report states whether the financial statements are in accordance with generally accepted accounting principles.
2. The report identifies those circumstances in which the company has not consistently observed such principles in the current period in relation to the preceding period.
3. Users are to regard the informative disclosures in the financial statements as reasonably adequate unless the report states otherwise.

4. The report contains either an expression of opinion regarding the financial statements taken as a whole or an assertion to the effect that an opinion cannot be expressed. When the auditor cannot express an overall opinion, the report should state the reasons. In all cases where an auditor's name is associated with financial statements, the report should contain a clear-cut indication of the character of the auditor's examination, if any, and the degree of responsibility being taken.

In most cases, the auditor issues a standard **unqualified (clean) opinion**. That is, the auditor expresses the opinion that the financial statements **present fairly**, in all material respects, the financial position, results of operations, and cash flows of the entity in conformity with generally accepted accounting principles.

Certain circumstances, although they do not affect the auditor's unqualified opinion, may require the auditor to add an explanatory paragraph to the audit report. Some of the more important circumstances are as follows.

1. **Going concern.** The auditor must evaluate whether there is substantial doubt about the entity's **ability to continue as a going concern** for a reasonable period of time, taking into consideration all available information about the future. (The future is at least, but not limited to, 12 months from the end of the reporting period.) If substantial doubt exists about the company continuing as a going concern, the auditor adds to the report an explanatory note describing the potential problem.[11]
2. **Lack of consistency.** If a company has changed accounting principles or the method of their application in a way that has a material effect on the comparability of its financial statements, the auditor should refer to the change in an explanatory paragraph of the report. Such an explanatory paragraph should identify the nature of the change and refer readers to the note in the financial statements that discusses the change in detail. The auditor's concurrence with a change is implicit unless the auditor takes exception to the change in expressing an opinion as to fair presentation in conformity with generally accepted accounting principles.
3. **Emphasis of a matter.** The auditor may wish to emphasize a matter regarding the financial statements but nevertheless intends to express an unqualified opinion. For example, the auditor may wish to emphasize that the entity is a component of a larger business or that it has had significant transactions with related parties. The auditor presents such explanatory information in a separate paragraph of the report.

In some situations, however, the auditor is required to express (1) a **qualified** opinion or (2) an **adverse** opinion, or (3) to **disclaim** an opinion.

A **qualified opinion** contains an exception to the standard opinion. Ordinarily, the exception is not of sufficient magnitude to invalidate the statements as a whole; if it were, an adverse opinion would be rendered. The usual circumstances in which the auditor may deviate from the standard unqualified short-form report on financial statements are as follows.

1. The scope of the audit is limited or affected by conditions or restrictions. In other words, the auditors could not complete some of their work.
2. The statements do not fairly present financial position or results of operations because of:
   a. Lack of conformity with generally accepted accounting principles and standards.
   b. Inadequate disclosure.

If confronted with one of the situations noted above, the auditor must offer a qualified opinion. A qualified opinion states that, **except for** the effects of the matter to which the qualification

[11] Although auditors are responsible for assessing going concern uncertainties, until recently there has been no guidance in GAAP for management disclosures in this area. The FASB now requires companies to evaluate conditions or events that raise substantial doubt about the company's ability to continue as a going concern (defined as when it is probable that the company will be unable to meet its obligations as they become due within one year after the date that the financial statements are issued). When management concludes there is substantial doubt about the going concern assumption, this must be disclosed along with information to explain that conclusion. Management should also consider and disclose actions that, if implemented, will mitigate the conditions that could lead to a going concern disclosure. [7]

relates, the financial statements present fairly, in all material respects, the financial position, results of operations, and cash flows in conformity with generally accepted accounting principles.

Illustration 23.13 shows an example of an auditor's report with a qualified opinion. The auditor qualified the opinion because the company used an accounting principle at variance with generally accepted accounting principles.

ILLUSTRATION 23.13 Qualified Auditor's Report

Helio Company

Independent Auditor's Report

(Same first and second paragraphs as the standard report)

Helio Company has excluded, from property and debt in the accompanying balance sheets, certain lease obligations that, in our opinion, should be capitalized in order to conform with generally accepted accounting principles. If these lease obligations were capitalized, property would be increased by $1,500,000 and $1,300,000, long-term debt by $1,400,000 and $1,200,000, and retained earnings by $100,000 and $50,000 as of December 31, in the current and prior year, respectively. Additionally, net income would be decreased by $40,000 and $30,000 and earnings per share would be decreased by $.06 and $.04, respectively, for the years then ended.

In our opinion, except for the effects of not capitalizing certain lease obligations as discussed in the preceding paragraph, the financial statements referred to above present fairly, in all material respects, the financial position of Helio Company, and the results of its operations and its cash flows for the years then ended in conformity with generally accepted accounting principles.

An **adverse opinion** is required in any report in which the exceptions to fair presentation are so material that in the independent auditor's judgment, a qualified opinion is not justified. In such a case, the financial statements taken as a whole are **not** presented in accordance with generally accepted accounting principles. Adverse opinions are rare, because most companies change their accounting to conform with GAAP. The SEC will not permit a company listed on an exchange to have an adverse opinion.

A **disclaimer of an opinion** is appropriate when the auditor has gathered so little information on the financial statements that no opinion can be expressed.

The audit report should provide useful information to the investor. One investment banker noted, "Probably the first item to check is the auditor's opinion to see whether or not it is a clean one—'in conformity with generally accepted accounting principles'—or is qualified in regard to differences between the auditor and company management in the accounting treatment of some major item, or in the outcome of some major litigation."

Accounting Matters

Covid-19 and Going Concern

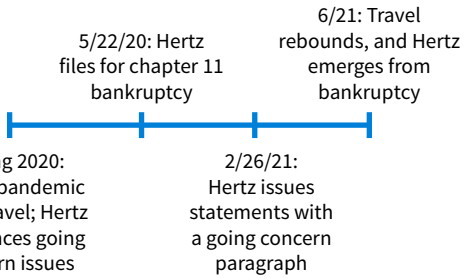
The Covid-19 pandemic impacted companies around the globe in 2020, with some industries being hit harder than others. In times of crisis, company executives scramble to preserve liquidity by cutting costs, decreasing the workforce, and stopping dividend payments. However, these actions sometimes are not enough to keep a company operating through an unexpected crisis.

If there is substantial doubt about a company's ability to continue as a going concern into the foreseeable future, it must be disclosed in the notes to the financial statements. As discussed, an auditor has the option to add an explanatory paragraph to the auditor's report to bring attention to a company's going concern issue. From the period May 31, 2020 through May 31, 2021, the percentage of going concern paragraphs issued by auditors increased in certain industries, as shown in the following table.

Industry	% Going Concern Paragraphs by Industry	% Increase
Construction	10.7%	1.1%
Finance, insurance, and real estate	8.3	1.8
Transportation, communication, electric, and gas	13.5	0.3

Receiving a going concern paragraph does not always indicate a company will be ceasing operations in the near future. For example, consider the chain of events for rental-car company **Hertz** shown at right.

What spurred Hertz's quick recovery? The second half of 2020 saw prices for used cars increasing. Therefore, Hertz took that opportunity to sell more than 200,000 of its vehicles, or about one-third of its fleet. It also streamlined operations and shed some debt with the resolution of its bankruptcy. Finally, the first half of 2021 showed a rebound in travel as people were ready to hit the road after sheltering in place for a year.


Spring 2020: Global pandemic halts travel; Hertz announces going concern issues
5/22/20: Hertz files for chapter 11 bankruptcy
2/26/21: Hertz issues statements with a going concern paragraph
6/21: Travel rebounds, and Hertz emerges from bankruptcy

Sources: M. Maurer, "Companies in Certain Industries Receive More Auditor Warnings About Survival," *CFO Journal* (June 21, 2021); and N. Chokshi,"Hertz Leaves Bankruptcy, A Year After the Pandemic Devastated the Car Rental Business," *The New York Times* (June 30, 2021, updated July 1, 2021).

Management's Reports

Management's Discussion and Analysis

The SEC mandates inclusion of **management's discussion and analysis (MD&A)**.

- The MD&A section covers three financial aspects of a company's business—liquidity, capital resources, and results of operations.
- In it, management highlights favorable or unfavorable trends and identifies significant events and uncertainties that affect these three factors.

This approach obviously involves subjective estimates, opinions, and soft data. However, the SEC believes that the relevance of this information exceeds the potential lack of faithful representation.

Illustration 23.14 presents an excerpt from the MD&A section ("Business Risks" only) of **PepsiCo**'s annual report.

ILLUSTRATION 23.14 Management's Discussion and Analysis

PepsiCo, Inc.

MD&A Our Business Risks—Risk Management Framework (in part)

The achievement of our strategic and operating objectives involves taking risks and that those risks may evolve over time. To identify, assess, prioritize, address, manage, monitor and communicate these risks across the Company's operations, we leverage an integrated risk management framework. This framework includes the following:

- PepsiCo's Board of Directors has oversight responsibility for PepsiCo's integrated risk management framework. One of the Board's primary responsibilities is overseeing and interacting with senior management with respect to key aspects of the Company's business, including risk assessment and risk mitigation of the Company's top risks. The Board receives updates on key risks throughout the year, including risks related to cybersecurity. During 2020, in addition to COVID-19 discussions as part of risk updates to the Board and the relevant Committees, the Board was provided with updates on COVID-19's impact to our business, financial condition and operations through memos, teleconferences or other appropriate means of communication. In addition, the Board has tasked designated Committees of the Board with oversight of certain categories of risk management, and the Committees report to the Board regularly on these matters.
- The PepsiCo Risk Committee (PRC), which is comprised of a cross-functional, geographically diverse, senior management group, including PepsiCo's Chairman of the Board and Chief Executive Officer, meets regularly to identify, assess, prioritize and address top strategic, financial, operating, compliance, safety, reputational and other risks. The PRC is also responsible for reporting progress on our risk mitigation efforts to the Board;
- PepsiCo's Corporate Audit Department evaluates the ongoing effectiveness of our key internal controls through periodic audit and review procedures; and
- PepsiCo's Compliance & Ethics and Law Departments lead and coordinate our compliance policies and practices.

ILLUSTRATION 23.14 (continued)

Market Risks

We are exposed to market risks arising from adverse changes in:

- commodity prices, affecting the cost of our raw materials and energy;
- foreign exchange rates and currency restrictions; and
- interest rates.

In the normal course of business, we manage commodity price, foreign exchange and interest rate risks through a variety of strategies, including productivity initiatives, global purchasing programs and hedging. Ongoing productivity initiatives involve the identification and effective implementation of meaningful cost-saving opportunities or efficiencies, including the use of derivatives. Our global purchasing programs include fixed-price contracts and purchase orders and pricing agreements. See "Item 1A. Risk Factors" for further discussion of our market risks, and see "Our Liquidity and Capital Resources" for further information on our non-cancelable purchasing commitments.

The MD&A section also must provide information about the effects of inflation and changing prices, if they are material to financial statement trends. The SEC has not required specific numerical computations, and companies have provided little analysis on changing prices.

An additional disclosure provided in the MD&A of many companies is discussion of the company's critical accounting policies. This disclosure identifies accounting policies that require management to make subjective judgments regarding uncertainties, resulting in potentially significant effects on the financial results.[12] For example, in its critical accounting policy disclosure, **Amazon** discussed the sensitivity of its estimates around reporting inventory at the lower-of-cost-or-net realizable value. It disclosed that for every 1% of additional inventory valuation allowance, it would record an additional cost of sales of $270 million. Through this voluntary disclosure, companies can expand on the information contained in the notes to the financial statements to indicate the sensitivity of the financial results to accounting policy judgments.

Accounting Matters — Environmental, Social, and Governance Disclosures

Have you heard the acronym ESG? If not, you will be hearing it more in the future. Here is a breakdown of the terms:

- **Environmental.** Considers how a company acts in its role as a steward of nature, such as energy use, recycling practices, pollution and natural resource conservation. The criteria can also be used to assess environmental risks and how the company is managing them.
- **Social.** Examines how well a company manages relationships with employees, suppliers, customers, and the community.
- **Governance.** Is concerned with a company's leadership, internal controls, executive pay, audits, and shareholder rights.

Investors are increasingly focused on ESG matters when making investment decisions. Therefore, many companies are including disclosures about ESG in their filings with the SEC.

In March 2021, the SEC announced the creation of a Climate and ESG Task Force within the Division of Enforcement. This task force will develop initiatives to proactively identify ESG-related misconduct and use data analytics to mine and assess information across registrants to identify potential violations. The SEC also announced one of its 2021 examination priorities is including a greater focus on climate-related risks.

There is much work to be done in this area. Most notably the SEC needs to decide on a framework for ESG reporting so that it is consistent across companies. Another important issue is determining the best place to disclose ESG information, such as in an annual report or other periodic filing with the SEC. This is an area to watch in the coming years and it will increasingly impact how companies gather, analyze, and disclose information.

Sources: KPMG, "SEC on ESG: Focus on Climate-Related Disclosures" (March 5, 2021); M. Cohn, "SEC Creates Task Force to Enforce ESG Disclosures," *Accounting Today (*March 5, 2021); and A. Ramonas, A. Iacone, and N. White, "SEC's Next Difficult Task for ESG is Finding a Standard Setter," *Securities Law* (April 13, 2021).

[12]See *Cautionary Advice Regarding Disclosure about Critical Accounting Policies,* Release Nos. 33-8040; 34-45149; FR-60 (Washington, D.C.: SEC); and *Proposed Rule: Disclosure in Management's Discussion and Analysis about the Application of Critical Accounting Policies,* Release Nos. 33-8098; 34-45907; International Series Release No. 1258; File No. S7-16-02 (Washington, D.C.: SEC).

Management's Responsibilities for Financial Statements

The Sarbanes-Oxley Act requires the SEC to develop guidelines for **all** publicly traded companies to report on management's responsibilities for, and assessment of, the internal control system. An example of the type of disclosure that public companies make is shown in Illustration 23.15.

ILLUSTRATION 23.15 Report on Management's Responsibilities

Starbucks

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that material information required to be disclosed in our periodic reports filed or submitted under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Our disclosure controls and procedures are also designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

During the fourth quarter of fiscal 2020, we carried out an evaluation, under the supervision and with the participation of our management, including our chief executive officer and our chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures. There were no changes in our internal control over financial reporting during our most recently completed fiscal quarter that materially affected or are reasonably likely to materially affect internal control over financial reporting. The certifications required by Section 302 of the Sarbanes-Oxley Act of 2002 are filed as exhibits 31.1 and 31.2, respectively, to this 10-K.

Report of Management on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of our financial statements; providing reasonable assurance that receipts and expenditures are made in accordance with management authorization; and providing reasonable assurance that unauthorized acquisition, use or disposition of company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected.

Management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework and criteria established in *Internal Control—Integrated Framework*, issued by the Committee of Sponsoring Organizations of the Treadway Commission. This evaluation included review of the documentation of controls, evaluation of the design effectiveness of controls, testing of the operating effectiveness of controls and a conclusion on this evaluation. Based on this evaluation, management concluded that our internal control over financial reporting was effective as of September 27, 2020. Our internal control over financial reporting as of September 27, 2020 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which is included herein.

As indicated in the disclosure, management is responsible for preparing the financial statements and establishing and maintaining an effective system of internal controls. The auditor provides an independent assessment of whether the financial statements are prepared in accordance with GAAP, and for public companies, whether the internal controls are effective.

23.4 Current Reporting Issues

LEARNING OBJECTIVE 4

Identify reporting issues related to fraudulent financial reporting and financial forecasts.

Fraudulent Financial Reporting

Fraudulent financial reporting is defined as "intentional or reckless conduct, whether act or omission, that results in materially misleading financial statements."[13] Fraudulent reporting can involve gross and deliberate distortion of corporate records, such as inventory count tags, or misapplication of accounting principles, such as failure to disclose material transactions. Although frauds are unusual, events involving such well-known companies as **Enron**, **WorldCom**, **Adelphia**, and **Theranos** indicate that more must be done to address this issue.

Causes of Fraudulent Financial Reporting

Fraudulent financial reporting usually occurs because of conditions in a company's internal or external environment. Influences in the **internal environment** relate to poor internal control systems, management's poor attitude toward ethics, or perhaps a company's liquidity or profitability. Those in the **external environment** may relate to industry conditions, overall business environment, or legal and regulatory considerations.

General incentives for fraudulent financial reporting vary. Common ones are the desire to obtain a higher stock price, to avoid default on a loan covenant, or to make a personal gain of some type (additional compensation, promotion, etc.). Situational pressures on the company or an individual manager also may lead to fraudulent financial reporting. Examples of these situational pressures include the following.

- **Sudden decreases in revenue or market share** for a single company or an entire industry.
- **Unrealistic budget pressures** may occur when headquarters arbitrarily determines profit objectives (particularly for short-term results) and budgets without taking actual conditions into account.
- **Financial pressure resulting from bonus plans** that depend on short-term economic performance. This pressure is particularly acute when the bonus is a significant component of the individual's total compensation.

Opportunities for fraudulent financial reporting are present in circumstances when the fraud is easy to commit and when detection is difficult. Frequently, these opportunities arise from:

1. **The absence of a board of directors or audit committee** that vigilantly oversees the financial reporting process.
2. **Weak or nonexistent internal accounting controls**. This situation can occur, for example, when a company's revenue system is overloaded as a result of a rapid expansion of sales, an acquisition of a new division, or the entry into a new, unfamiliar line of business.
3. **Unusual or complex transactions** such as the consolidation of two companies, the divestiture or closing of a specific operation, and the purchase and sale of derivative instruments.

[13]"Report of the National Commission on Fraudulent Financial Reporting" (Washington, D.C., 1987), page 2. Unintentional errors as well as corporate improprieties (such as tax fraud, employee embezzlements, and so on) which do not cause the financial statements to be misleading are excluded from the definition of fraudulent financial reporting.

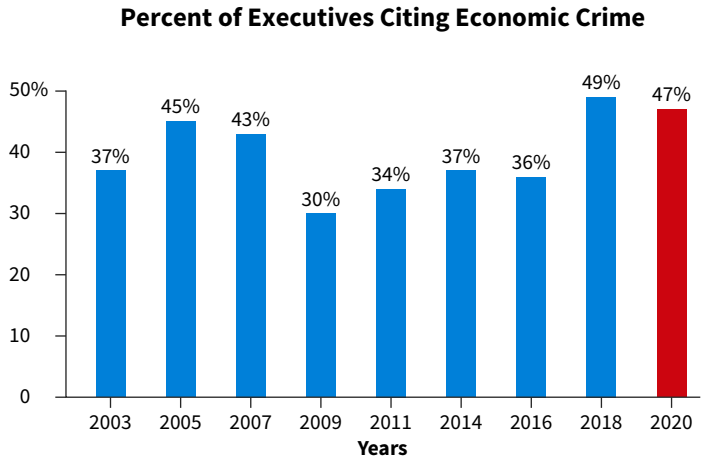
4. **Accounting estimates requiring significant subjective judgment** by company management, such as the allowance for loan losses and the estimated liability for warranty expense.
5. **Ineffective internal audit staffs** resulting from inadequate staff size and severely limited audit scope.

A weak corporate ethical climate contributes to these situations. Opportunities for fraudulent financial reporting also increase dramatically when the accounting principles followed in reporting transactions are nonexistent, evolving, or subject to varying interpretations.[14]

Trends

While fraudulent financial reporting is the exception rather than the rule, economic crime is on the rise around the world. A recent global survey of over 5,000 executives from 99 countries documented the growth of economic crimes, as shown in Illustration 23.16.

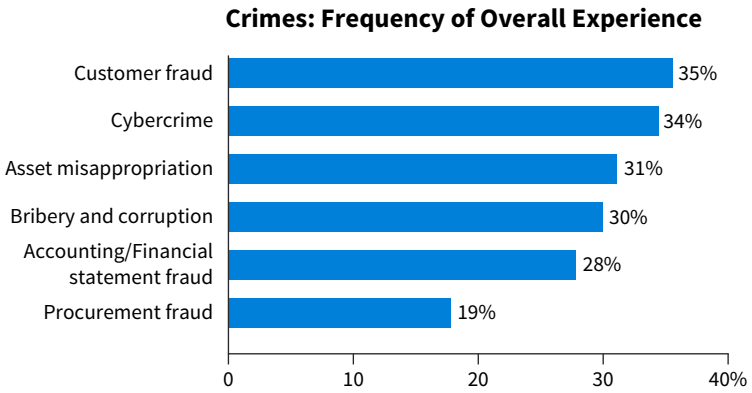
ILLUSTRATION 23.16 Trends in Economic Crime



Source: 2020 Global Economic Crime and Fraud Survey.

Illustration 23.17 shows where the increase in economic crime is occurring; customer fraud and cybercrime are generally the most common. Accounting/Financial statement fraud is another top source overall.

ILLUSTRATION 23.17 Types of Reported Fraud



Source: PwC's 2020 Global Economic Crime and Fraud Survey.

Accounting **errors** are **unintentional** mistakes, whereas **fraud**, such as misappropriation of assets and fraudulent financial reporting,) involves **intentional** distortions of financial

[14]The discussion in this section is based on the Report of the National Commission on Fraudulent Financial Reporting, pp. 23–24 (2004). See also "2012 Report to the Nation on Occupational Fraud and Abuse, Association of Certified Fraud Examiners" for fraudulent financial reporting causes and consequences.

statements.[15] Companies should correct the financial statements when they discover errors. The same treatment should be given to fraud. The discovery of fraud, however, gives rise to a different set of procedures and responsibilities for the accountant/auditor.

Illegal acts encompass such items as illegal political contributions, bribes, kickbacks, and other violations of laws and regulations.[16] In these situations, the accountant/auditor must evaluate the adequacy of disclosure in the financial statements. For example, if a company derives revenue from an illegal act that is considered material in relation to the financial statements, this information should be disclosed. The Sarbanes-Oxley Act is intended to deter these illegal acts. This law adds significant fines and longer jail time for those who improperly sign off on the correctness of financial statements that include willing and knowing misstatements.

Disclosure plays a very important role in these types of transactions because the events are more qualitative than quantitative and involve more subjective than objective evaluation. Users of the financial statements need some indication of the existence and nature of these transactions, through disclosures, modifications in the auditor's report (as discussed above), or reports of changes in auditors.

Response by the Profession

The AICPA has issued numerous auditing standards in response to concerns of the accounting profession, the media, and the public.[17] For example, the standard on fraudulent financial reporting "raises the bar" on the performance of financial statement audits by explicitly requiring auditors to assess the risk of material financial misstatement due to fraud.[18] Also, the Sarbanes-Oxley Act now raises the penalty substantially for executives who are involved in fraudulent financial reporting.

Internet Financial Reporting

Most companies now use the power and reach of the Internet to provide more useful information to financial statement readers. All large companies have Internet sites, and a large proportion of companies' websites contain links to their financial statements and other disclosures. The popularity of such reporting is not surprising since it reduces the companies' costs of printing and disseminating paper reports.

Does Internet financial reporting improve the usefulness of a company's financial reports? Yes, in several ways.

1. Dissemination of reports via the Web allows firms **to communicate more easily and quickly with users** than do traditional paper reports.
2. **Internet reporting allows users to take advantage of tools** such as search engines and hyperlinks to quickly find information about the firm and to download the information for analysis.

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[15]See AU-C Section 240, "Consideration of Fraud in a Financial Statement Audit," *Statement of Auditing Standards No. 122*. Effective for audits of financial statements for periods ending on or after December 31, 2013. Predecessor literature: "Consideration of Fraud in a Financial Statement Audit," *Statement on Auditing Standards No. 99* (New York: AICPA, 2002). Since passage of the Sarbanes-Oxley Act, auditors of public companies are regulated by the Public Company Accounting Oversight Board (PCAOB). The PCAOB is now the audit standard-setter for auditors of public companies. It has adopted much of the prior auditing standards issued by the Auditing Standards Board of the AICPA.

[16]See AU-C Section 250, "Consideration of Laws and Regulations in an Audit of Financial Statements," *Statement of Auditing Standards No. 122*. Effective for audits of financial statements for periods ending on or after December 31, 2013. Predecessor literature: "Illegal Acts by Clients," *Statement on Auditing Standards No. 54* (New York: AICPA, 1988).

[17]Because the profession believes that the role of the auditor is not well understood outside the profession, much attention has been focused on the expectation gap. The **expectation gap** is the gap between (1) the expectation of financial statement users concerning the level of assurance they believe the independent auditor provides, and (2) the assurance that the independent auditor actually does provide under generally accepted auditing standards.

[18]See AU-C Section 240, "Consideration of Fraud in a Financial Statement Audit," *Statement of Auditing Standards No. 122*. Effective for audits of financial statements for periods ending on or after December 31, 2013. Predecessor literature: "Consideration of Fraud in a Financial Statement Audit," *Statement on Auditing Standards No. 99* (New York: AICPA, 2002).

3. **Internet reporting can help make financial reports more relevant** by allowing companies to report expanded disaggregated data and more timely data than is possible through paper-based reporting. For example, some companies voluntarily report weekly sales data and segment operating data on their websites.

Given the widespread use of the Internet by investors and creditors, it is not surprising that organizations are developing new technologies and standards to further enable and enhance Internet financial reporting.

An example is the established use of eXtensible Business Reporting Language (XBRL). **XBRL** is a computer language adapted from the code of the Internet. It "tags" accounting data to correspond to financial reporting items that are reported in the balance sheet, income statement, and the cash flow statement. Once tagged, any company's XBRL data can be easily processed using spreadsheets and other computer programs. In fact, the SEC requires all companies and mutual funds to prepare their financial reports using XBRL, thereby allowing users to more easily search a company's reports, extract and analyze data, and perform financial comparisons within industries.[19]

To complement the implementation of XBRL use, the SEC has supplemented its EDGAR database with a system called IDEA (short for Interactive Data Electronic Applications). This enhancement of EDGAR marks the SEC's transition from collecting forms and documents to making the information itself freely available to investors in a timely form they can readily use. With IDEA, investors can quickly collate information from thousands of companies and forms and create reports and analyses on the fly, in any way they choose. IDEA has opened the door for both the SEC and investors to the new world of financial disclosure in interactive data (XBRL) format.[20]

Reporting on Financial Forecasts and Projections

In recent years, the investing public's demand for more and better information has focused on disclosure of corporate expectations for the future. These disclosures take one of two forms:[21]

- **Financial forecasts**. A **financial forecast** is a set of prospective financial statements that present, to the best of the responsible party's knowledge and belief, a company's expected financial position, results of operations, and cash flows. The responsible party bases a financial forecast on conditions it expects to exist and the course of action it expects to take.
- **Financial projections**. **Financial projections** are prospective financial statements that present, to the best of the responsible party's knowledge and belief, given one or more **hypothetical assumptions**, an entity's expected financial position, results of operations, and cash flows. The responsible party bases a financial projection on conditions it expects **would** exist and the course of action it expects **would** be taken, given one or more hypothetical assumptions.

The difference between a financial forecast and a financial projection is clear-cut. A forecast provides information on what is **expected** to happen, whereas a projection provides information on what **might** take place but is not necessarily expected to happen.

[19]See *SEC Interactive Data Rules for Operating Companies* (*http://www.sec.gov/rules/final/2009/33-9002.pdf*); and C. Twarowski, "Financial Data 'on Steroids'," *Washington Post* (August 19, 2008), p. D01. The FASB (and IASB) have collaborated to implement XBRL with their standards. See the FASB website; click on Taxonomy (XBRL).

[20]The SEC has implemented other regulations to ensure that investors get high-quality disclosures. For example, as discussed in Chapter 3, the SEC was concerned that companies may use pro forma reporting to deflect investor attention from bad news. In response, the SEC issued Regulation G, which requires companies to reconcile non-GAAP financial measures to GAAP. This regulation provides investors with a roadmap to analyze adjustments companies make to their GAAP numbers to arrive at pro forma results. [See SEC Regulation G, "Conditions for Use of Non-GAAP Financial Measures," Release No. 33-8176 (March 28, 2003).]

[21]See AT-C Section 305, "Prospective Financial Information," *Statement of Auditing Standards No. 18*: *Concepts Common to All Attestation Engagements*. Predecessor literature: "Financial Forecasts and Projections" and "Guide for Prospective Financial Information," *Codification of Statements on Standards for Attestation Engagements* (New York: AICPA 2006), paras. 3.04 and 3.05.

Whether companies should be required to provide financial forecasts is the subject of intensive discussion with journalists, corporate executives, the SEC, financial analysts, accountants, and others. Predictably, there are strong arguments on either side. Presented below are some of the arguments.

Arguments for Requiring Published Forecasts
1. Investment decisions are based on future expectations. Therefore, information about the future facilitates better decisions.
2. Companies already circulate forecasts informally. This situation should be regulated to ensure that the forecasts are available to all investors.
3. Circumstances change so rapidly that historical information is no longer adequate for prediction.

Arguments Against Requiring Published Forecasts
1. No one can foretell the future. As the revered philosopher Yogi Berra remarked, "It's tough to make predictions, especially about the future." Therefore, forecasts will inevitably be wrong. Worse, they may mislead, if they convey an impression of precision about the future.
2. Companies may strive only to meet their published forecasts, thereby failing to produce results that are in the stockholders' best interest.
3. If forecasts prove inaccurate, there will be recriminations and probably legal actions (see **Underlying Concepts**).[22]
4. Disclosure of forecasts will be detrimental to organizations, because forecasts will inform competitors (foreign and domestic) as well as investors.

Underlying Concepts

The profession indicates that the legal environment discourages companies from disclosing forward-looking information. Companies should not have to expand reporting of forward-looking information unless there are more effective deterrents to unwarranted litigation.

The AICPA has issued a statement on standards for accountants' services on prospective financial information. This statement establishes guidelines for the preparation and presentation of financial forecasts and projections.[23] It requires accountants to provide (1) a summary of significant assumptions used in the forecast or projection and (2) guidelines for minimum presentation.

To encourage management to disclose prospective financial information, the SEC has a **safe harbor rule**. It provides protection to a company that presents an erroneous forecast, as long as the company prepared the forecast on a reasonable basis and disclosed it in good faith.[24] However, many companies note that the safe harbor rule does not work in practice, since it does not cover oral statements, nor has it kept them from investor lawsuits.

Questions of Liability

What happens if a company does not meet its forecasts? Can the company and the auditor be sued? If a company, for example, projects an earnings increase of 15% and achieves only 5%, should stockholders be permitted to have some judicial recourse against the company?

One court case involving **Monsanto Chemical Corporation** set a precedent. In this case, Monsanto predicted that sales would increase 8-9% and that earnings would rise 4-5%. In the last part of the year, the demand for Monsanto's products dropped as a result of a business turndown. Instead of increasing, the company's earnings declined. Investors sued the company because the projected earnings figure was erroneous, but a judge dismissed the suit because the forecasts were the best estimates of qualified people whose intents were honest.

[22]The issue is serious. Over a recent three-year period, 8% of the companies on the NYSE were sued because of an alleged lack of financial disclosure. Companies complain that they are subject to lawsuits whenever the stock price drops. And as one executive noted, "You can even be sued if the stock price goes up—because you did not disclose the good news fast enough."

[23]*Op. cit.*

[24]"Safe-Harbor Rule for Projections," *Release No. 5993* (Washington, D.C.: SEC, 1979). The Private Securities Litigation Reform Act of 1995 recognizes that some information that is useful to investors is inherently subject to less certainty or reliability than other information. By providing safe harbor for forward-looking statements, Congress has sought to facilitate access to this information by investors.

As indicated earlier, the SEC's safe harbor rules are intended to protect companies that provide good-faith projections. However, much concern exists as to how the SEC and the courts will interpret such terms as "good faith" and "reasonable assumptions" when erroneous forecasts mislead users of this information.

Accounting Matters — Can You Say That?

Recent litigation involving **Tesla** CEO Elon Musk, aka Technoking of Tesla, highlights the need for the safe harbor rule. A class of Tesla investors argued that statements made by Musk and then Tesla CFO Deepak Ahuja regarding the production of the Model 3 were false and misleading. Musk had indicated that production was "on track" and there were "no issues." Investors argued that employees had told Musk that production was delayed, and any Model 3s built at that time were produced by hand.

The courts ruled in favor of Tesla finding that the statements were considered forward-looking and covered by the safe harbor rule, as they were accompanied by "meaningful cautionary statements." While Musk has a track record of drawing scrutiny for things he says (and tweets), this is a prime example of why management would be very hesitant to share any forward-looking statements with investors without safe harbor protection.

Source: Kelly Curtis, "Shareholders Cannot Sue Corporate Officers for Forward-Looking Projections that Don't Pan Out, Ninth Circuit Affirms," *JDSUPRA* (February 17, 2021).

Criteria for Making Accounting and Reporting Choices

Underlying Concepts

The FASB concept statements on the objective of financial reporting, elements of financial statements, qualitative characteristics of accounting information, and recognition and measurement are important steps in the right direction.

Throughout this text, we have stressed the need to provide information that is useful to predict the amounts, timing, and uncertainty of future cash flows. To achieve this objective, companies must make judicious choices between alternative accounting concepts, methods, and means of disclosure. You are probably surprised by the large number of choices that exist among acceptable alternatives.

You should recognize, however, as indicated in Chapter 1, that accounting is greatly influenced by its environment. It does not exist in a vacuum. Therefore, it is unrealistic to assume that the profession can entirely eliminate alternative presentations of certain transactions and events. Nevertheless, we are hopeful that the profession, by adhering to the conceptual framework, will be able to focus on the needs of financial statement users and eliminate diversity where appropriate.

The SEC's and FASB's projects on principles-based standards and disclosure effectiveness are directed at these very issues. They seek to develop guidance that will result in accounting and financial reporting that reflects the economic substance of the transactions, not the desired financial result of management. The profession must continue its efforts to develop a sound foundation upon which to build financial standards and practice (see **Underlying Concepts**). As Aristotle said, "The correct beginning is more than half the whole."

APPENDIX **23A**

Basic Financial Statement Analysis

LEARNING OBJECTIVE *5

Describe the approach to financial statement analysis.

What would be important to you in studying a company's financial statements? The answer depends on your particular interest—whether you are a creditor, stockholder, potential investor, manager, government agency, or labor leader. For example, **short-term creditors** such as banks are primarily interested in the ability of the firm to pay its currently maturing obligations. In that case, you would examine the current assets and their relation to short-term liabilities to evaluate the short-run solvency of the firm.

Bondholders, on the other hand, look more to long-term indicators, such as the company's capital structure, past and projected earnings, and changes in financial position. **Stockholders**, present or prospective, also are interested in many of the features considered by a long-term creditor. As a stockholder, you would focus on the earnings picture, because changes in it greatly affect the market price of your investment. You also would be concerned with the financial position of the company, because it affects indirectly the stability of earnings.

The **managers** of a company are concerned about the composition of its capital structure and about the changes and trends in earnings. This financial information has a direct influence on the type, amount, and cost of external financing that the company can obtain. In addition, the company managers find financial information useful on a day-to-day operating basis in such areas as capital budgeting, break-even analysis, variance analysis, gross margin analysis, and for internal control purposes.

Perspective on Financial Statement Analysis

Readers of financial statements can gather information by examining relationships between items on the statements and identifying trends in these relationships. The relationships are expressed numerically in ratios and percentages, and trends are identified through comparative analysis (see **Underlying Concepts**).

A problem with learning how to analyze statements is that the means may become an end in itself. Analysts could identify and calculate thousands of possible relationships and trends. But if analysts only calculate ratios and trends without understanding how such information can be used, little is accomplished. Therefore, a logical approach to financial statement analysis is necessary, consisting of the following steps.

Underlying Concepts

Because financial statements report on the past, they emphasize the **qualitative characteristic of feedback value**. This feedback value is useful because it can be used to better achieve the **qualitative characteristic of predictive value**.

1. **Know the questions for which you want to find answers.** As indicated earlier, various groups have different types of interest in a company.
2. **Know the questions that particular ratios and comparisons are able to help answer.** These will be discussed in this appendix.
3. **Match 1 and 2 above.** By such a matching, the statement analysis will have a logical direction and purpose.

Several caveats must be mentioned. **Financial statements report on the past.** Thus, analysis of these data is an examination of the past. When using such information in a decision-making (future-oriented) process, analysts assume that the past is a reasonable basis for predicting the future. This is usually a reasonable approach, but its limitations should be recognized.

Also, ratio and trend analyses will help identify a company's present strengths and weaknesses. They may serve as "red flags" indicating problem areas. In many cases, however, such analyses will not reveal **why** things are as they are. Finding answers about "why" usually requires an in-depth analysis and an awareness of many factors about a company that are not reported in the financial statements.

Another caveat is that a **single ratio by itself is not likely to be very useful**. For example, analysts may generally view a current ratio of 2 to 1 (current assets are twice current liabilities) as satisfactory. However, if the industry average is 3 to 1, such a conclusion may be invalid. Even given this industry average, one may conclude that the particular company is doing well if one knows the previous year's ratio was 1.5 to 1. Consequently, to derive meaning from ratios, analysts need some standard against which to compare them. Such a standard may come from industry averages, past years' amounts, a particular competitor, or planned levels.

Finally, **awareness of the limitations of accounting numbers used in an analysis** is important. We will discuss some of these limitations and their consequences later in this appendix.

Ratio Analysis

LEARNING OBJECTIVE *6

Identify major analytic ratios and describe their calculation.

In analyzing financial statement data, analysts use various devices to bring out the comparative and relative significance of the financial information presented. These devices include ratio analysis, comparative analysis, percentage analysis, and examination of related data. No one device is more useful than another. Every situation is different, and analysts often obtain the needed answers only upon close examination of the interrelationships among all the data provided. Ratio analysis is the starting point. Ratios can be classified as follows.

Major Types of Ratios

Liquidity ratios. Measures of the company's short-run ability to pay its maturing obligations.

Activity ratios. Measures of how effectively the company is using the assets employed.

Profitability ratios. Measures of the degree of success or failure of a given company or division for a given period of time.

Coverage ratios. Measures of the degree of protection for long-term creditors and investors.[25]

We have integrated discussions and illustrations about the computation and use of these financial ratios throughout this text. **Illustration 23A.1** summarizes all of the ratios presented in this text and identifies the specific chapters that present this material.

ILLUSTRATION 23A.1 Summary of Financial Ratios

Ratio	Formula for Computation	Reference
I. Liquidity		
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Chapter 12
2. Quick or acid-test ratio	$\frac{\text{Cash + Short-term investments + Accounts receivable (net)}}{\text{Current liabilities}}$	Chapter 12
3. Current cash debt coverage	$\frac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}}$	Chapter 4
II. Activity		
4. Accounts receivable turnover	$\frac{\text{Net sales}}{\text{Average net accounts receivable}}$	Chapter 6
5. Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Chapter 8
6. Asset turnover	$\frac{\text{Net sales}}{\text{Average total assets}}$	Chapter 10

[25]Some analysts use other terms to categorize these ratios. For example, liquidity ratios are sometimes referred to as **solvency** ratios; activity ratios as **turnover** or **efficiency** ratios; and coverage ratios as **leverage** or **capital structure** ratios.

ILLUSTRATION 23A.1 (continued)

Ratio	Formula for Computation	Reference
III. Profitability		
7. **Profit margin on sales**	$\frac{\text{Net income}}{\text{Net sales}}$	Chapter 10
8. **Return on assets**	$\frac{\text{Net income}}{\text{Average total assets}}$	Chapter 10
9. **Return on common stockholders' equity**	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common stockholders' equity}}$	Chapter 14
10. **Earnings per share**	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted-average common shares outstanding}}$	Chapter 15
11. **Payout ratio**	$\frac{\text{Cash dividends}}{\text{Net income}}$	Chapter 14
IV. Coverage		
12. **Debt to assets ratio**	$\frac{\text{Total liabilities}}{\text{Total assets}}$	Chapter 13
13. **Times interest earned**	$\frac{\text{Net income} + \text{Interest expense} + \text{Income tax expense}}{\text{Interest expense}}$	Chapter 13
14. **Cash debt coverage**	$\frac{\text{Net cash provided by operating activities}}{\text{Average total liabilities}}$	Chapter 4
15. **Book value per share**	$\frac{\text{Common stockholder's equity}}{\text{Outstanding shares}}$	Chapter 14

Additional coverage of these ratios, accompanied by assignment material, is available online. This supplemental coverage takes the form of a comprehensive case adapted from the annual report of a large international chemical company that we have disguised under the name of Anetek Chemical Corporation.

Limitations of Ratio Analysis

LEARNING OBJECTIVE *7

Explain the limitations of ratio analysis.

The reader of financial statements must understand the basic limitations associated with ratio analysis. As analytical tools, ratios are attractive because they are simple and convenient. But too frequently, decision-makers base their decisions on only these simple computations. The ratios are only as good as the data upon which they are based and the information with which they are compared.

One important limitation of ratios is that they generally are **based on historical cost**, **which can lead to distortions in measuring performance**. Inaccurate assessments of the company's financial condition and performance can result from failing to incorporate fair value information.

Also, investors must remember that **where estimated items (such as depreciation and amortization) are significant**, **income ratios lose some of their credibility**. For example, income recognized before the termination of a company's life is an approximation. In analyzing the income statement, users should be aware of the uncertainty surrounding the computation of net income.

Underlying Concepts

Consistency and comparability are important concepts for financial statement analysis. If the principles and assumptions used to prepare the financial statements are continually changing, accurate assessments of a company's progress become difficult.

As one writer aptly noted, "The physicist has long since conceded that the location of an electron is best expressed by a probability curve. Surely an abstraction like earnings per share is even more subject to the rules of probability and risk."[26]

Probably the greatest limitation of ratio analysis is the **difficult problem of achieving comparability among firms in a given industry**. Achieving comparability requires that the analyst (1) identifies basic differences in companies' accounting principles and procedures, and (2) adjusts the balances to achieve comparability (see **Underlying Concepts**). Basic differences in accounting usually involve one of the following areas.

1. Inventory valuation (FIFO, LIFO, average-cost).
2. Depreciation methods, particularly the use of straight-line versus accelerated depreciation.
3. Capitalization versus expensing of certain costs.
4. Investments in common stock carried at equity versus fair value.
5. Differing treatments of postretirement benefit costs.
6. Questionable practices of defining discontinued operations and impairments.

The use of these different alternatives can make a significant difference in the ratios computed.

For example, at one time **Anheuser-Busch InBev** noted that if it had used average-cost for inventory valuation instead of LIFO, inventories would have increased approximately $33,000,000. Such an increase would have a substantive impact on the current ratio. Several studies have analyzed the impact of different accounting methods on financial statement analysis. The differences in income that can develop are staggering in some cases. Investors must be aware of the potential pitfalls if they are to be able to make the proper adjustments.

Finally, analysts should recognize that a **substantial amount of important information** is not included in a company's financial statements. Events involving such things as industry changes, management changes, competitors' actions, technological developments, government actions, and union activities are often critical to a company's successful operation. These events occur continuously, and information about them must come from careful analysis of financial reports in the media and other sources. Indeed many argue, in what is known as the **efficient-market hypothesis**, that financial statements contain "no surprises" to those engaged in market activities. They contend that the effect of these events is known in the marketplace—and the price of the company's stock adjusts accordingly—well before the issuance of such reports.

Comparative Analysis

LEARNING OBJECTIVE *8

Describe techniques of comparative analysis.

Comparative analysis presents the same information for two or more different dates or periods, so that like items may be compared. Ratio analysis provides only a single snapshot, for one given point or period in time. In a comparative analysis, an investment analyst can concentrate on a given item and determine whether it appears to be growing or diminishing year by year and the proportion of such change to related items. Generally, companies present comparative financial statements. They typically include two years of balance sheet information and three years of income statement information.

In addition, many companies include in their annual reports five- or ten-year summaries of pertinent data that permit readers to examine and analyze trends. As indicated in GAAP, "the presentation of comparative financial statements in annual and other reports enhances

[26]Richard E. Cheney, "How Dependable Is the Bottom Line?" *The Financial Executive* (January 1971), p. 12.

the usefulness of such reports and brings out more clearly the nature and trends of current changes affecting the enterprise." **Illustration 23A.2** presents a five-year condensed statement, with additional supporting data, of Anetek Chemical Corporation.

ILLUSTRATION 23A.2 Condensed Comparative Financial Information

Anetek Chemical Corporation
Condensed Comparative Statements
(000,000 omitted)

	2025	2024	2023	2022	2021	10 Years Ago 2015	20 Years Ago 2005
Sales and other revenue:							
Net sales	$1,600.0	$1,350.0	$1,309.7	$1,176.2	$1,077.5	$636.2	$170.7
Other revenue	75.0	50.0	39.4	34.1	24.6	9.0	3.7
Total	1,675.0	1,400.0	1,349.1	1,210.3	1,102.1	645.2	174.4
Costs and other charges:							
Cost of sales	1,000.0	850.0	827.4	737.6	684.2	386.8	111.0
Depreciation and amortization	150.0	150.0	122.6	115.6	98.7	82.4	14.2
Selling and administrative expenses	225.0	150.0	144.2	133.7	126.7	66.7	10.7
Interest expense	50.0	25.0	28.5	20.7	9.4	8.9	1.8
Income taxes	100.0	75.0	79.5	73.5	68.3	42.4	12.4
Total	1,525.0	1,250.0	1,202.2	1,081.1	987.3	587.2	150.1
Net income for the year	$ 150.0	$ 150.0	$ 146.9	$ 129.2	$ 114.8	$ 58.0	$ 24.3
Other Statistics							
Earnings per share on common stock (in dollars)[a]	$ 5.00	$ 5.00	$ 4.90	$ 3.58	$ 3.11	$ 1.66	$ 1.06
Cash dividends per share on common stock (in dollars)[a]	2.25	2.15	1.95	1.79	1.71	1.11	0.25
Cash dividends declared on common stock	67.5	64.5	58.5	64.6	63.1	38.8	5.7
Stock dividend at approximate market value				46.8		27.3	
Taxes (major)	144.5	125.9	116.5	105.6	97.8	59.8	17.0
Wages paid	389.3	325.6	302.1	279.6	263.2	183.2	48.6
Cost of employee benefits	50.8	36.2	32.9	28.7	27.2	18.4	4.4
Number of employees at year end (thousands)	47.4	36.4	35.0	33.8	33.2	26.6	14.6
Additions to property	306.3	192.3	241.5	248.3	166.1	185.0	49.0

[a]Adjusted for stock splits and stock dividends.

Percentage (Common-Size) Analysis

LEARNING OBJECTIVE *9

Describe techniques of percentage analysis.

Analysts also use percentage analysis to help them evaluate and compare companies. **Percentage analysis** consists of reducing a series of related amounts to a series of percentages of a given base. For example, analysts frequently express all items in an income statement as a percentage of sales or sometimes as a percentage of cost of goods sold. They may analyze a balance sheet on the basis of total assets. Percentage analysis facilitates comparison and is helpful in evaluating the relative size of items or the relative change in items. A conversion of absolute dollar amounts to percentages may also facilitate comparison between companies of different size.

Illustration 23A.3 shows a comparative analysis of the expense section of Anetek for the last two years.

ILLUSTRATION 23A.3 Horizontal Percentage Analysis

Anetek Chemical Corporation
Horizontal Comparative Analysis
(000,000 omitted)

	2025	2024	Difference	% Change Inc. (Dec.)
Cost of sales	$1,000.0	$850.0	$150.0	17.6%
Depreciation and amortization	150.0	150.0	0	0
Selling and administrative expenses	225.0	150.0	75.0	50.0
Interest expense	50.0	25.0	25.0	100.0
Income taxes	100.0	75.0	25.0	33.3

This approach, normally called **horizontal analysis**, indicates the proportionate change over a period of time. It is especially useful in evaluating trends, because absolute changes are often deceiving.

Another comparative approach, called **vertical analysis**, is the proportional expression of each financial statement item in a given period to a base figure. For example, Anetek Chemical's 2025 income statement using the percentage analysis approach appears in Illustration 23A.4.

ILLUSTRATION 23A.4 Vertical Percentage Analysis

Anetek Chemical Corporation
Income Statement
(000,000 omitted)

	Amount	Percentage of Total Revenue
Net sales	$1,600.0	96%
Other revenue	75.0	4
Total revenue	1,675.0	100
Less:		
Cost of sales	1,000.0	60
Depreciation and amortization	150.0	9
Selling and administrative expenses	225.0	13
Interest expense	50.0	3
Income taxes	100.0	6
Total expenses	1,525.0	91
Net income	$ 150.0	9%

Vertical analysis is frequently called **common-size analysis** because it reduces all of the statement items to a "common size." That is, all of the elements within each statement are expressed in percentages of some common number and always add up to 100%. Common-size (percentage) analysis reveals the composition of each of the financial statements.

In the analysis of the balance sheet, common-size analysis answers such questions as: What percentage of the capital structure is stockholders' equity, current liabilities, and long-term debt? What is the mix of assets (percentage-wise) with which the company has chosen to conduct business? What percentage of current assets is in inventory, receivables, and so forth?

Common-size analysis of the income statement typically relates each item to sales. It is instructive to know what proportion of each sales dollar is absorbed by various costs and expenses incurred by the company.

Analysts may use common-size statements to compare one company's statements from different years in order to detect trends not evident from comparing absolute amounts. Also, common-size statements provide intercompany comparisons regardless of size because they recast financial statements into a comparable common-size format.

Review and Practice

Key Terms Review

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*activity ratios 23-36
adverse opinion 23-25
*asset turnover 23-36
auditor 23-22
auditor's report 23-22
*book value per share 23-37
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Learning Objectives Review

1 Review the full disclosure principle and describe how it is implemented.

The **full disclosure principle** calls for financial reporting of any financial facts significant enough to influence the judgment of an informed reader. Implementing the full disclosure principle is difficult because the cost of disclosure can be substantial and the benefits difficult to assess. Disclosure requirements have increased because of (1) the growing complexity of the business environment, (2) the necessity for timely information, and (3) the use of accounting as a control and monitoring device.

Notes in financial statement preparation. Notes are the accountant's means of amplifying or explaining the items presented in the main body of the statements. Notes can explain in qualitative terms information pertinent to specific financial statement items, and can provide supplementary data of a quantitative nature. Common note disclosures relate to such items as accounting policies; inventories; property, plant, and equipment; creditor claims; contingencies and commitments; and subsequent events.

2 Discuss the disclosure requirements for related-party transactions, post-balance-sheet events, major business segments, and interim reporting.

In **related-party transactions,** one party has the ability to significantly influence the policies of the other. As a result, GAAP requires disclosure of the relationship(s) involved, a description and dollar amounts of the transactions, and amounts due from or to related parties. For **post-balance-sheet events**, companies should disclose recognized subsequent events as well as nonrecognized subsequent events. Finally, aggregated figures hide much information about the composition of these consolidated figures. There is no way to tell from the consolidated data the extent to which the differing product lines contribute to the company's profitability, risk, and growth potential. As a result, the profession requires **segment information** in certain situations.

Interim reports cover periods of less than one year. Two viewpoints exist regarding interim reports. The discrete approach holds that each interim period should be treated as a separate accounting period. The integral approach is that the interim report is an integral part of the annual report and that deferrals and accruals should take into consideration what will happen for the entire year.

Companies should use the same accounting principles for interim reports that they use for annual reports. A number of unique reporting problems develop related to the following items: (1) advertising and similar costs, (2) expenses subject to year-end adjustment, (3) income taxes, (4) earnings per share, and (5) seasonality.

3 Identify the major disclosures in the auditor's report and understand management's responsibilities for the financial statements.

In the **auditor's report,** the auditor expresses an unqualified opinion if satisfied that the financial statements present the financial position, results of operations, and cash flows fairly in accordance with generally accepted accounting principles. A qualified opinion contains an exception to the standard opinion; ordinarily, the exception is not of sufficient magnitude to invalidate the statements as a whole.

An adverse opinion is required when the exceptions to fair presentation are so material that a qualified opinion is not justified. A

disclaimer of an opinion is appropriate when the auditor has so little information on the financial statements that no opinion can be expressed.

Management's responsibilities for financials. Management's discussion and analysis (MD&A) section covers three financial aspects of a company's business: liquidity, capital resources, and results of operations. Management's responsibility for the financial statements is often indicated in a letter to stockholders in the annual report.

4 Identify reporting issues related to fraudulent financial reporting and financial forecasts.

The profession's response to fraudulent financial reporting. Fraudulent financial reporting is intentional or reckless conduct, whether through act or omission, that results in materially misleading financial statements. Fraudulent financial reporting usually occurs because of poor internal control, management's poor attitude toward ethics, poor performance, and so on. The Sarbanes-Oxley Act has numerous provisions intended to help prevent fraudulent financial reporting.

Financial forecasts. The SEC has indicated that companies are permitted (not required) to include profit forecasts in their reports. To encourage management to disclose such information, the SEC issued a safe harbor rule. The rule provides protection to a company that presents an erroneous forecast, as long as it prepared the projection on a reasonable basis and disclosed it in good faith. However, the safe harbor rule has not worked well in practice.

*5 Describe the approach to financial statement analysis.

Basic financial statement analysis involves examining relationships between items on the statements (ratio and percentage analysis) and identifying trends in these relationships (comparative analysis). Analysis is used to predict the future, but ratio analysis is limited because the data are from the past. Also, ratio analysis identifies present strengths and weaknesses of a company, but it may not reveal *why* they exist. Although single ratios are helpful, they are not conclusive. For maximum usefulness, analysts must compare them with industry averages, past years, planned amounts, and the like.

*6 Identify major analytic ratios and describe their calculation.

Ratios are classified as liquidity ratios, activity ratios, profitability ratios, and coverage ratios. (1) *Liquidity ratio analysis* measures the short-run ability of a company to pay its currently maturing obligations. (2) *Activity ratio analysis* measures how effectively a company is using its assets. (3) *Profitability ratio analysis* measures the degree of success or failure of a company to generate revenues adequate to cover its costs of operation and provide a return to the owners. (4) *Coverage ratio analysis* measures the degree of protection afforded long-term creditors and investors.

*7 Explain the limitations of ratio analysis.

Ratios are based on historical cost, which can lead to distortions in measuring performance. Also, where estimated items are significant, income ratios lose some of their credibility. In addition, comparability problems exist because companies use different accounting principles and procedures. Finally, analysts must recognize that a substantial amount of important information is not included in a company's financial statements.

*8 Describe techniques of comparative analysis.

Companies present comparative data, which generally includes two years of balance sheet information and three years of income statement information. In addition, many companies include in their annual reports five- to ten-year summaries of pertinent data that permit the reader to analyze trends.

*9 Describe techniques of percentage analysis.

Percentage analysis consists of reducing a series of related amounts to a series of percentages of a given base. Analysts use two approaches. *Horizontal analysis* indicates the proportionate change in financial statement items over a period of time; such analysis is most helpful in evaluating trends. *Vertical analysis* (common-size analysis) is a proportional expression of each item on the financial statements in a given period to a base amount. It analyzes the composition of each of the financial statements from different years (a) to detect trends not evident from the comparison of absolute amounts and (b) to make intercompany comparisons of different-sized companies.

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Note: All asterisked Questions, Exercises, and Problems relate to material in the appendix to the chapter.

Questions

1. What are the major advantages of notes to the financial statements? What types of items are usually reported in notes?

2. What is the full disclosure principle in accounting? Why has disclosure increased substantially in the last 10 years?

3. The FASB requires a reconciliation between the effective tax rate and the federal government's statutory rate. Of what benefit is such a disclosure requirement?

4. What type of disclosure or accounting do you believe is necessary for the following items?

   a. Because of a general increase in the number of labor disputes and strikes, both within and outside the industry, there is an increased likelihood that a company will suffer a costly strike in the near future.

   b. A company reports a material unusual and infrequent loss on the income statement. No other mention is made of this item in the annual report.

   c. A company expects to recover a substantial amount in connection with a pending refund claim for a prior year's taxes. Although the claim is being contested, counsel for the company has confirmed the client's expectation of recovery.

5. The following information was described in a note of Canon Packing Co.

   "During August, Holland Products Corporation purchased 311,003 shares of the Company's common stock which constitutes approximately 35% of the stock outstanding. Holland has since obtained representation on the Board of Directors."

   "An affiliate of Holland Products Corporation acts as a food broker for Canon Packing in the greater New York City marketing area. The commissions for such services after August amounted to approximately $20,000."

   Why is this information disclosed?

6. What are the major types of subsequent events? Indicate how each of the following "subsequent events" would be reported.

   a. Collection of a note written off in a prior period.

   b. Issuance of a large preferred stock offering.

   c. Acquisition of a company in a different industry.

   d. Destruction of a major plant in a flood.

   e. Death of the company's chief executive officer (CEO).

   f. Additional wage costs associated with settlement of a four-week strike.

   g. Settlement of a federal income tax case at considerably more tax than anticipated at year-end.

   h. Change in the product mix from consumer goods to industrial goods.

7. What are diversified companies? What accounting problems are related to diversified companies?

8. What quantitative materiality tests are applied to determine whether a segment is significant enough to warrant separate disclosure?

9. Identify the segment information that is required to be disclosed by GAAP.

10. What is an operating segment, and when can information about two operating segments be aggregated?

11. The controller for Lafayette Inc. recently commented, "If I have to disclose our segments individually, the only people who will gain are our competitors and the only people that will lose are our present stockholders." Evaluate this comment.

12. An article in the financial press entitled "Important Information in Annual Reports This Year" noted that annual reports include a management's discussion and analysis section. What would this section contain?

13. "The financial statements of a company are management's, not the accountant's." Discuss the implications of this statement.

14. What are interim reports? Why are balance sheets often not provided with interim data?

15. What are the accounting problems related to the presentation of interim data?

16. Dierdorf Inc., a closely held corporation, has decided to go public. The controller, Ed Floyd, is concerned with presenting interim data when a LIFO inventory valuation is used. What problems are encountered with LIFO inventories when quarterly data are presented?

17. What approaches have been suggested to overcome the seasonality problem related to interim reporting?

18. What is the difference between a CPA's unqualified opinion or "clean" opinion and a qualified one?

19. Jane Ellerby and Sam Callison are discussing the recent fraud that occurred at LowRental Leasing, Inc. The fraud involved the improper reporting of revenue to ensure that the company would have income in excess of $1 million. What is fraudulent financial reporting, and how does it differ from an embezzlement of company funds?

20. Olga Conrad, a financial writer, noted recently, "There are substantial arguments for including earnings projections in annual reports and the like. The most compelling is that it would give anyone interested something now available to only a relatively select few—like large stockholders, creditors, and attentive bartenders." Identify some arguments against providing earnings projections.

21. The following comment appeared in the financial press: "Inadequate financial disclosure, particularly with respect to how management views the future and its role in the marketplace, has always been a stone in the shoe. After all, if you don't know how a company views the future, how can you judge the worth of its corporate strategy?" What are some arguments for reporting earnings forecasts?

*22. "The significance of financial statement data is not in the amount alone." Discuss the meaning of this statement.

*23. A close friend of yours, who is a history major and who has not had any college courses or any experience in business, is receiving the financial statements from companies in which he has minor investments (acquired for him by his now-deceased grandfather). He asks you what he needs to know to interpret and to evaluate the financial statement data that he is receiving. What would you tell him?

*24. Distinguish between ratio analysis and percentage analysis relative to the interpretation of financial statements. What is the value of these two types of analyses?

*25. In calculating inventory turnover, why is cost of goods sold used as the numerator? As the inventory turnover increases, what increasing risk does the business assume?

*26. What is the relationship of the asset turnover to the return on assets?

*27. Explain the meaning of the following terms: (a) common-size analysis, (b) vertical analysis, (c) horizontal analysis, and (d) percentage analysis.

*28. Presently, the profession requires that earnings per share be disclosed on the face of the income statement. What are some disadvantages of reporting ratios on the financial statements?

Brief Exercises

BE23.1 (LO 1) An annual report of Crestwood Industries states, "The company and its subsidiaries have long-term leases expiring on various dates after December 31, 2025. Amounts payable under such commitments, without reduction for related rental income, are expected to average approximately $5,711,000 annually for the next 3 years. Related rental income from certain subleases to others is estimated to average $3,094,000 annually for the next 3 years." What information is provided by this note?

BE23.2 (LO 1) An annual report of **Ford Motor Corporation** states, "Net income per share is computed based upon the average number of shares of capital stock of all classes outstanding. Additional shares of common stock may be issued or delivered in the future on conversion of outstanding convertible debentures, exercise of outstanding employee stock options, and for payment of defined supplemental compensation. Had such additional shares been outstanding, net income per share would have been reduced by 10¢ in the current year and 3¢ in the previous year.... As a result of capital stock transactions by the company during the current year (primarily the purchase of Class A Stock from Ford Foundation), net income per share was increased by 6¢." What information is provided by this note?

BE23.3 (LO 2) Morlan Corporation is preparing its December 31, 2025, financial statements. Two events that occurred between December 31, 2025, and March 10, 2026, when the statements were issued, are described below.

1. A liability, estimated at $160,000 at December 31, 2025, was settled on February 26, 2026, at $170,000.
2. A flood loss of $80,000 occurred on March 1, 2026.

What effect do these subsequent events have on 2025 net income?

BE23.4 (LO 2) Tina Bailey, a student of intermediate accounting, was heard to remark after a class discussion on segment reporting, "All this is very confusing to me. First, we are told that there is merit in presenting the consolidated results, and now we are told that it is better to show segmental results. I wish they would make up their minds." Evaluate this comment.

BE23.5 (LO 2) Foley Corporation has seven industry segments with total revenues as follows.

Penley	$600	Cheng	$225
Konami	650	Takuhi	200
KSC	250	Molina	700
Red Moon	275		

Based only on the revenues test, which industry segments are reportable?

BE23.6 (LO 2) Operating profits and losses for the seven industry segments of Foley Corporation are:

Penley	$ 90	Cheng	$(20)
Konami	(40)	Takuhi	34
KSC	25	Molina	150
Red Moon	50		

Based only on the operating profit (loss) test, which industry segments are reportable?

BE23.7 (LO 2) Identifiable assets for the seven industry segments of Foley Corporation are:

Penley	$500	Cheng	$200
Konami	550	Takuhi	150
KSC	250	Molina	475
Red Moon	400		

Based only on the identifiable assets test, which industry segments are reportable?

***BE23.8 (LO 6)** Answer each of the questions in the following unrelated situations.

a. The current ratio of a company is 5:1 and its acid-test ratio is 1:1. If the inventories and prepaid items amount to $500,000, what is the amount of current liabilities?

b. A company had an average inventory last year of $200,000 and its inventory turnover was 5. If sales volume and unit cost remain the same this year as last and inventory turnover is 8 this year, what will average inventory have to be during the current year?

c. A company has current assets of $90,000 (of which $40,000 is inventory and prepaid items) and current liabilities of $40,000. What is the current ratio? What is the acid-test ratio? If the company borrows $15,000 cash from a bank on a 120-day loan, what will its current ratio be? What will the acid-test ratio be?

d. A company has current assets of $600,000 and current liabilities of $240,000. The board of directors declares a cash dividend of $180,000. What is the current ratio after the declaration but before payment? What is the current ratio after the payment of the dividend?

***BE23.9** **(LO 6)** Heartland Company's budgeted sales and budgeted cost of goods sold for the coming year are $144,000,000 and $99,000,000, respectively. Short-term interest rates are expected to average 10%. If Heartland can increase inventory turnover from its present level of 9 times a year to a level of 12 times per year, compute its expected interest cost savings for the coming year.

Exercises

E23.1 **(LO 2)** **(Post-Balance-Sheet Events)** Madrasah Corporation issued its financial statements for the year ended December 31, 2025, on March 10, 2026. The following events took place early in 2026.

a. On January 10, 10,000 shares of $5 par value common stock were issued at $66 per share.

b. On March 1, Madrasah determined after negotiations with the Internal Revenue Service that income taxes payable for 2025 should be $1,270,000. At December 31, 2025, income taxes payable were recorded at $1,100,000.

Instructions

Discuss how the preceding post-balance-sheet events should be reflected in the 2025 financial statements.

E23.2 **(LO 2)** Excel **(Post-Balance-Sheet Events)** For each of the following subsequent (post-balance-sheet) events, indicate whether a company should (a) adjust the financial statements, (b) disclose in notes to the financial statements, or (c) neither adjust nor disclose.

_____ **1.** Settlement of federal tax case at a cost considerably in excess of the amount expected at year-end.

_____ **2.** Introduction of a new product line.

_____ **3.** Loss of assembly plant due to fire.

_____ **4.** Sale of a significant portion of the company's assets.

_____ **5.** Retirement of the company president.

_____ **6.** Prolonged employee strike.

_____ **7.** Loss of a significant customer.

_____ **8.** Issuance of a significant number of shares of common stock.

_____ **9.** Material loss on a year-end receivable because of a customer's bankruptcy.

_____ **10.** Hiring of a new president.

_____ **11.** Settlement of prior year's litigation against the company (no loss was accrued).

_____ **12.** Merger with another company of comparable size.

E23.3 **(LO 2)** Excel **(Segmented Reporting)** Carlton Company is involved in four separate industries. The following information is available for each of the four industries.

Operating Segment	Total Revenue	Operating Profit (Loss)	Identifiable Assets
W	$ 60,000	$15,000	$167,000
X	10,000	3,000	83,000
Y	23,000	(2,000)	21,000
Z	9,000	1,000	19,000
	$102,000	$17,000	$290,000

Instructions

Determine which of the operating segments are reportable based on the:

a. Revenue test.

b. Operating profit (loss) test.

c. Identifiable assets test.

*E23.4 (LO 6) **(Ratio Computation and Analysis; Liquidity)** As loan analyst for Utrillo Bank, you have been presented the following information.

	Toulouse Co.	Lautrec Co.
Assets		
Cash	$ 120,000	$ 320,000
Receivables	220,000	302,000
Inventories	570,000	518,000
Total current assets	910,000	1,140,000
Other assets	500,000	612,000
Total assets	$1,410,000	$1,752,000
Liabilities and Stockholders' Equity		
Current liabilities	$ 305,000	$ 350,000
Long-term liabilities	400,000	500,000
Capital stock and retained earnings	705,000	902,000
Total liabilities and stockholders' equity	$1,410,000	$1,752,000
Annual sales	$930,000	$1,500,000
Rate of gross profit on sales	30%	40%

Each of these companies has requested a loan of $50,000 for 6 months with no collateral offered. Because your bank has reached its quota for loans of this type, only one of these requests is to be granted.

Instructions

Which of the two companies, as judged by the information given above, would you recommend as the better risk and why? Assume that the ending account balances are representative of the entire year.

*E23.5 (LO 6) **(Analysis of Given Ratios)** Picasso Company is a wholesale distributor of packaging equipment and supplies. The company's sales have averaged about $900,000 annually for the 3-year period 2023–2025. The firm's total assets at the end of 2025 amounted to $850,000.

The president of Picasso Company has asked the controller to prepare a report that summarizes the financial aspects of the company's operations for the past 3 years. This report will be presented to the board of directors at their next meeting.

In addition to comparative financial statements, the controller has decided to present a number of relevant financial ratios which can assist in the identification and interpretation of trends. At the request of the controller, the accounting staff has calculated the following ratios for the 3-year period 2023–2025.

	2023	2024	2025
Current ratio	1.80	1.89	1.96
Acid-test (quick) ratio	1.04	0.99	0.87
Accounts receivable turnover	8.75	7.71	6.42
Inventory turnover	4.91	4.32	3.42
Debt to assets ratio	51.0%	46.0%	41.0%
Long-term debt to assets ratio	31.0%	27.0%	24.0%
Sales to fixed assets (fixed asset turnover)	1.58	1.69	1.79
Sales as a percent of 2023 sales	1.00	1.03	1.07
Gross margin percentage	36.0%	35.1%	34.6%
Net income to sales	6.9%	7.0%	7.2%
Return on assets	7.7%	7.7%	7.8%
Return on common stockholders' equity	13.6%	13.1%	12.7%

In preparation of the report, the controller has decided first to examine the financial ratios independent of any other data to determine if the ratios themselves reveal any significant trends over the 3-year period.

Instructions

a. The current ratio is increasing while the acid-test (quick) ratio is decreasing. Using the ratios provided, identify and explain the contributing factor(s) for this apparently divergent trend.

b. In terms of the ratios provided, what conclusion(s) can be drawn regarding the company's use of financial leverage during the 2023–2025 period?

c. Using the ratios provided, what conclusion(s) can be drawn regarding the company's net investment in plant and equipment?

*E23.6 (LO 6) **(Ratio Analysis)** Edna Millay Inc. is a manufacturer of electronic components and accessories with total assets of $20,000,000. Selected financial ratios for Millay and the industry averages for firms of similar size are presented below.

	Edna Millay			2025 Industry
	2023	2024	2025	Average
Current ratio	2.09	2.27	2.51	2.24
Quick ratio	1.15	1.12	1.19	1.22
Inventory turnover	2.40	2.18	2.02	3.50
Net sales to stockholders' equity	2.71	2.80	2.99	2.85
Return on common stockholders' equity	0.14	0.15	0.17	0.11
Total liabilities to stockholders' equity	1.41	1.37	1.44	0.95

Millay is being reviewed by several entities whose interests vary, and the company's financial ratios are a part of the data being considered. Each of the parties listed below must recommend an action based on its evaluation of Millay's financial position.

Archibald MacLeish Bank. The bank is processing Millay's application for a new 5-year term note. Archibald MacLeish has been Millay's banker for several years but must reevaluate the company's financial position for each major transaction.

Robert Lowell Company. Lowell is a new supplier to Millay and must decide on the appropriate credit terms to extend to the company.

Robert Penn Warren. A brokerage firm specializing in the stock of electronics firms that are sold over-the-counter, Robert Penn Warren must decide if it will include Millay in a new fund being established for sale to Robert Penn Warren's clients.

Working Capital Management Committee. This is a committee of Millay's management personnel chaired by the chief operating officer. The committee is charged with the responsibility of periodically reviewing the company's working capital position, comparing actual data against budgets, and recommending changes in strategy as needed.

Instructions

a. Describe the analytical use of each of the six ratios presented above.

b. For each of the four entities, identify two financial ratios, from the ratios presented above, that would be most valuable as a basis for its decision regarding Millay.

c. Discuss what the financial ratios presented in the question reveal about Millay. Support your answer by citing specific ratio levels and trends as well as the interrelationships between these ratios.

(CMA adapted)

Problems

P23.1 (LO 2) (Subsequent Events) Your firm has been engaged to examine the financial statements of Almaden Corporation for the year 2025. The bookkeeper who maintains the financial records has prepared all the unaudited financial statements for the corporation since its organization on January 2, 2020. The client provides you with the following information.

Almaden Corporation
Balance Sheet
December 31, 2025

Assets		Liabilities	
Current assets	$1,881,100	Current liabilities	$ 962,400
Other assets	5,171,400	Long-term liabilities	1,439,500
	$7,052,500	Stockholders' equity	4,650,600
			$7,052,500

An analysis of current assets discloses the following.

Cash (restricted in the amount of $300,000 for plant expansion)	$ 571,000
Investments in land	185,000
Accounts receivable less allowance of $30,000	480,000
Inventories (LIFO flow assumption)	645,100
	$1,881,100

Other assets include:

Prepaid expenses	$ 62,400
Plant and equipment less accumulated depreciation of $1,430,000	4,130,000

Cash surrender value of life insurance policy	84,000
Unamortized bond discount	34,500
Notes receivable (short-term)	162,300
Goodwill	252,000
Land	446,200
	$5,171,400

Current liabilities include:

Accounts payable	$ 510,000
Notes payable (due 2028)	157,400
Estimated income taxes payable	145,000
Premium on common stock	150,000
	$ 962,400

Long-term liabilities include:

Unearned revenue	$ 489,500
Dividends payable (cash)	200,000
8% bonds payable (due May 1, 2030)	750,000
	$1,439,500

Stockholders' equity includes:

Retained earnings	$2,810,600
Common stock, par value $10; authorized 200,000 shares, 184,000 shares issued	1,840,000
	$4,650,600

The supplementary information below is also provided.

1. On May 1, 2025, the corporation issued at 95.4, $750,000 of bonds to finance plant expansion. The long-term bond agreement provided for the annual payment of interest every May 1. The existing plant was pledged as security for the loan. Use the straight-line method for discount amortization.
2. The bookkeeper made the following mistakes.
   a. In 2023, the ending inventory was overstated by $183,000. The ending inventories for 2024 and 2025 were correctly computed.
   b. In 2025, accrued wages in the amount of $225,000 were omitted from the balance sheet, and these expenses were not charged on the income statement.
   c. In 2025, a gain of $175,000 (net of tax) on the sale of certain plant assets was credited directly to retained earnings.
3. A major competitor has introduced a line of products that will compete directly with Almaden's primary line, now being produced in a specially designed new plant. Because of manufacturing innovations, the competitor's line will be of comparable quality but priced 50% below Almaden's line. The competitor announced its new line on January 14, 2026. Almaden indicates that the company will meet the lower prices that are high enough to cover variable manufacturing and selling expenses, but permit recovery of only a portion of fixed costs.
4. You learned on January 28, 2026, prior to completion of the audit, of heavy damage because of a recent fire to one of Almaden's two plants; the loss will not be reimbursed by insurance. The newspapers described the event in detail.

Instructions

Analyze the above information to prepare a corrected balance sheet for Almaden in accordance with proper accounting and reporting principles. Prepare a description of any notes that might need to be prepared. The books are closed and adjustments to income are to be made through retained earnings.

P23.2 (LO 2) (Segmented Reporting) Cineplex Corporation is a diversified company that operates in five different industries: A, B, C, D, and E. The following information relating to each segment is available for 2026.

	A	B	C	D	E
Sales revenue	$40,000	$ 75,000	$580,000	$35,000	$55,000
Cost of goods sold	19,000	50,000	270,000	19,000	30,000
Operating expenses	10,000	40,000	235,000	12,000	18,000
Total expenses	29,000	90,000	505,000	31,000	48,000
Operating profit (loss)	$11,000	$(15,000)	$ 75,000	$ 4,000	$ 7,000
Identifiable assets	$35,000	$ 80,000	$500,000	$65,000	$50,000

Sales of segments B and C included intersegment sales of $20,000 and $100,000, respectively.

Instructions

a. Determine which of the segments are reportable based on the:

1. Revenue test.

2. Operating profit (loss) test.

3. Identifiable assets test.

b. Prepare the necessary disclosures required by GAAP.

***P23.3 (LO 6,8)** Excel Groupwork **(Ratio Computations and Additional Analysis)** Bradburn Corporation was formed 5 years ago through a public subscription of common stock. Daniel Brown, who owns 15% of the common stock, was one of the organizers of Bradburn and is its current president. The company has been successful, but it currently is experiencing a shortage of funds. On June 10, 2026, Daniel Brown approached the Topeka National Bank, asking for a 24-month extension on two $35,000 notes, which are due on June 30, 2026, and September 30, 2026. Another note of $6,000 is due on March 31, 2027, but he expects no difficulty in paying this note on its due date. Brown explained that Bradburn's cash flow problems are due primarily to the company's desire to finance a $300,000 plant expansion over the next 2 fiscal years through internally generated funds.

The commercial loan officer of Topeka National Bank requested the following financial reports for the last 2 fiscal years.

Bradburn Corporation
Balance Sheet
March 31

	2026	2025
Assets		
Cash	$ 18,200	$ 12,500
Notes receivable	148,000	132,000
Accounts receivable (net)	131,800	125,500
Inventories (at cost)	105,000	50,000
Plant & equipment (net of depreciation)	1,449,000	1,420,500
Total assets	$1,852,000	$1,740,500
Liabilities and Stockholders' Equity		
Accounts payable	$ 79,000	$ 91,000
Notes payable	76,000	61,500
Accrued liabilities	9,000	6,000
Common stock (130,000 shares, $10 par)	1,300,000	1,300,000
Retained earnings[a]	388,000	282,000
Total liabilities and stockholders' equity	$1,852,000	$1,740,500

[a]Cash, dividends were paid at the rate of $1 per share in fiscal year 2025 and $2 per share in fiscal year 2026.

Bradburn Corporation
Income Statement
For the Fiscal Years Ended March 31

	2026	2025
Sales revenue	$3,000,000	$2,700,000
Cost of goods sold[a]	1,530,000	1,425,000
Gross margin	1,470, 000	1,275,000
Operating expenses	860,000	780,000
Income before income taxes	610,000	495,000
Income taxes (40%)	244,000	198,000
Net income	$ 366,000	$ 297,000

[a]Depreciation charges on the plant and equipment of $100,000 and $102,500 for fiscal years ended March 31, 2025 and 2026, respectively, are included in cost of goods sold.

Instructions

a. Compute the following items for Bradburn Corporation.

1. Current ratio for fiscal years 2025 and 2026.

2. Acid-test (quick) ratio for fiscal years 2025 and 2026.

3. Inventory turnover for fiscal year 2026.
4. Return on assets for fiscal years 2025 and 2026. (Assume total assets were $1,688,500 at 3/31/24.)
5. Percentage change in sales, cost of goods sold, gross margin, and net income after taxes from fiscal year 2025 to 2026.

b. Identify and explain what other financial reports and/or financial analyses might be helpful to the commercial loan officer of Topeka National Bank in evaluating Daniel Brown's request for a time extension on Bradburn's notes.

c. Assume that the percentage changes experienced in fiscal year 2026 as compared with fiscal year 2025 for sales, cost of goods sold, and operating expenses will be repeated in each of the next 2 years. Is Bradburn's desire to finance the plant expansion from internally generated funds realistic? Discuss.

d. Should Topeka National Bank grant the extension on Bradburn's notes considering Daniel Brown's statement about financing the plant expansion through internally generated funds? Discuss.

***P23.4 (LO 9) Excel (Horizontal and Vertical Analysis)** Presented below is the comparative balance sheet for Gilmour Company.

Gilmour Company
Comparative Balance Sheet
As of December 31

	2026	2025
Assets		
Cash	$ 180,000	$ 275,000
Accounts receivable (net)	220,000	155,000
Short-term investments	270,000	150,000
Inventories	1,060,000	980,000
Prepaid expenses	25,000	25,000
Plant & equipment	2,585,000	1,950,000
Accumulated depreciation	(1,000,000)	(750,000)
	$3,340,000	$2,785,000
Liabilities and Stockholders' Equity		
Accounts payable	$ 50,000	$ 75,000
Accrued expenses	170,000	200,000
Bonds payable	450,000	190,000
Common stock	2,100,000	1,770,000
Retained earnings	570,000	550,000
	$3,340,000	$2,785,000

Instructions

(Round to two decimal places.)

a. Prepare a comparative balance sheet of Gilmour Company showing the percent each item is of the total assets or total liabilities and stockholders' equity.

b. Prepare a comparative balance sheet of Gilmour Company showing the dollar change and the percent change for each item.

c. Of what value is the additional information provided in part (a)?

d. Of what value is the additional information provided in part (b)?

***P23.5 (LO 6) Writing (Dividend Policy Analysis)** Matheny Inc. went public 3 years ago. The board of directors will be meeting shortly after the end of the year to decide on a dividend policy. In the past, growth has been financed primarily through the retention of earnings. A stock or a cash dividend has never been declared. Presented below is a brief financial summary of Matheny Inc. operations.

	($000 omitted)				
	2026	2025	2024	2023	2022
Sales revenue	$20,000	$16,000	$14,000	$6,000	$4,000
Net income	2,400	1,400	800	700	250
Average total assets	22,000	19,000	11,500	4,200	3,000
Current assets	8,000	6,000	3,000	1,200	1,000
Working capital	3,600	3,200	1,200	500	400
Common shares:					
Number of shares outstanding (000)	2,000	2,000	2,000	20	20
Average market price	$ 9	$ 6	$ 4	—	—

Instructions

a. Suggest factors to be considered by the board of directors in establishing a dividend policy.

b. Compute the return on assets, profit margin on sales, earnings per share, price-earnings ratio, and current ratio for each of the 5 years for Matheny Inc.

c. Comment on the appropriateness of declaring a cash dividend at this time, using the ratios computed in part (b) as a major factor in your analysis.

(AICPA adapted)

Using Your Judgment

Financial Reporting Problem: The Procter & Gamble Company (P&G)

UYJ23.1 As stated in the chapter, notes to the financial statements are the means of explaining the items presented in the main body of the statements. Common note disclosures relate to such items as accounting policies, segment information, and interim reporting. The financial statements of **P&G** are presented in Appendix B. The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to P&G's financial statements and the accompanying notes to answer the following questions.

a. What specific items does P&G discuss in its Note 1—Summary of Significant Accounting Policies? (List the headings only.)

b. For what segments did P&G report segment information? Which segment is the largest? Who is P&G's largest customer?

c. What interim information was reported by P&G?

Comparative Analysis Case: The Coca-Cola Company and PepsiCo, Inc.

UYJ23.2 The financial statements of **Coca-Cola** and **PepsiCo** are presented in Appendices C and D, respectively. The companies' complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

a. **1.** What specific items does Coca-Cola discuss in its Note 1—Accounting Policies? (Prepare a list of the headings only.)

2. What specific items does PepsiCo discuss in its Note 2—Our Summary of Significant Accounting Policies? (Prepare a list of the headings only.)

b. For what lines of business or segments do Coca-Cola and PepsiCo present segment information?

c. Note and comment on the similarities and differences between the auditors' reports submitted by the independent auditors of Coca-Cola and PepsiCo for the year 2020.

Financial Statement Analysis Case: RNA Inc.

***UYJ23.3** RNA Inc. manufactures a variety of consumer products. The company's founders have run the company for 30 years and are now interested in retiring. Consequently, they are seeking a purchaser who will continue its operations, and a group of investors, Morgan Inc., is looking into the acquisition of RNA. To evaluate its financial stability and operating efficiency, RNA was requested to provide the latest financial statements and selected financial ratios. Summary information provided by RNA is as follows.

RNA Inc.
Income Statement
For the Year Ended November 30, 2026
(in thousands)

Sales (net)	$30,500
Interest income	500
Total revenue	31,000
Costs and expenses	
Cost of goods sold	17,600
Selling and administrative expenses	3,550
Depreciation and amortization expense	1,890
Interest expense	900
Total costs and expenses	23,940
Income before taxes	7,060
Income taxes	2,800
Net income	$ 4,260

RNA Inc.
Balance Sheet
As of November 30
(in thousands)

	2026	2025
Cash	$ 400	$ 500
Short-term investments (at cost)	300	200
Accounts receivable (net)	3,200	2,900
Inventory	6,000	5,400
Total current assets	9,900	9,000
Property, plant, & equipment (net)	7,100	7,000
Total assets	$17,000	$16,000
Accounts payable	$ 3,700	$ 3,400
Income taxes payable	900	800
Accrued expenses	1,700	1,400
Total current liabilities	6,300	5,600
Long-term debt	2,000	1,800
Total liabilities	8,300	7,400
Common stock ($1 par value)	2,700	2,700
Paid-in capital in excess of par	1,000	1,000
Retained earnings	5,000	4,900
Total stockholders' equity	8,700	8,600
Total liabilities and stockholders' equity	$17,000	$16,000

Selected Financial Ratios

	RNA Inc.		Current
	2025	2024	Industry Average
Current ratio	1.61	1.62	1.63
Acid-test ratio	.64	.63	.68
Times interest earned	8.55	8.50	8.45
Profit margin on sales	13.2%	12.1%	13.0%
Asset turnover	1.84	1.83	1.84
Inventory turnover	3.17	3.21	3.18

Instructions

a. Calculate a new set of ratios for the fiscal year 2026 for RNA based on the financial statements presented.

b. Explain the analytical use of each of the six ratios presented, describing what the investors can learn about RNA's financial stability and operating efficiency.

c. Identify two limitations of ratio analysis.

(CMA adapted)

Accounting, Analysis, and Principles

UYJ 23.4 Savannah, Inc. is a company that manufactures and sells a single product. Unit sales for each of the four quarters of 2025 are projected as follows.

Quarter	Units
First	80,000
Second	150,000
Third	550,000
Fourth	120,000
Annual total	900,000

Savannah incurs variable manufacturing costs of $0.40 per unit and variable nonmanufacturing costs of $0.35 per unit. Savannah will incur fixed manufacturing costs of $720,000 and fixed nonmanufacturing costs of $1,080,000. Savannah will sell its product for $4.00 per unit.

Accounting

Determine the amount of net income Savannah will report in each of the four quarters of 2025, assuming actual sales are as projected and employing the integral approach to interim financial reporting. (Ignore income taxes.) Repeat the analysis under the discrete approach.

Analysis

Compute Savannah's profit margin on sales for each of the four quarters of 2025 under both the integral and discrete approaches. Discuss the effects of employing the integral and the discrete approaches on the degree to which Savannah's profit margin on sales varies from quarter to quarter.

Principles

Explain the conceptual rationale behind the integral approach to interim financial reporting.

Developing Your Professional Skills

Critical-Thinking Cases

CT23.1 (LO 1, 2) (General Disclosures; Inventories; Property, Plant, and Equipment) Koch Corporation is in the process of preparing its annual financial statements for the fiscal year ended April 30, 2026. Because all of Koch's shares are traded intrastate, the company does not have to file any reports with the Securities and Exchange Commission. The company manufactures plastic, glass, and paper containers for sale to food and drink manufacturers and distributors.

Koch Corporation maintains separate control accounts for its raw materials, work in process, and finished goods inventories for each of the three types of containers. The inventories are valued at the lower-of-cost-or-market.

The company's property, plant, and equipment are classified in the following major categories: land, office buildings, furniture and fixtures, manufacturing facilities, manufacturing equipment, and leasehold improvements. All fixed assets are carried at cost. The depreciation methods employed depend on the type of asset (its classification) and when it was acquired.

Koch Corporation plans to present the inventory and fixed asset amounts in its April 30, 2026, balance sheet as shown below.

Inventories	$4,814,200
Property, plant, and equipment (net of depreciation)	6,310,000

Instructions

What information regarding inventories and property, plant, and equipment must be disclosed by Koch Corporation in the audited financial statements issued to stockholders, either in the body or the notes, for the 2025–2026 fiscal year?

(CMA adapted)

CT23.2 (LO 1, 2) (Disclosures Required in Various Situations) Ace Inc. produces electronic components for sale to manufacturers of radios, television sets, and digital sound systems. In connection with her examination of Ace's financial statements for the year ended December 31, 2026, Gloria Rodd, CPA, completed field work 2 weeks ago. Ms. Rodd now is evaluating the significance of the following items prior to preparing her auditor's report. Except as noted, none of these items have been disclosed in the financial statements or notes.

Item 1: A 10-year loan agreement, which the company entered into 3 years ago, provides that dividend payments may not exceed net income earned after taxes subsequent to the date of the agreement. The balance of retained earnings at the date of the loan agreement was $420,000. From that date through December 31, 2026, net income after taxes has totaled $570,000 and cash dividends have totaled $320,000. On the basis of these data, the staff auditor assigned to this review concluded that there was no retained earnings restriction at December 31, 2026.

Item 2: Recently Ace interrupted its policy of paying cash dividends quarterly to its stockholders. Dividends were paid regularly through 2025, discontinued for all of 2026 to finance purchase of equipment for the company's new plant, and resumed in the first quarter of 2027. In the annual report, dividend policy is to be discussed in the president's letter to stockholders.

Item 3: A major electronics firm has introduced a line of products that will compete directly with Ace's primary line, now being produced in the specially designed new plant. Because of manufacturing innovations, the competitor's line will be of comparable quality but priced 50% below Ace's line. The competitor announced its new line during the week following completion of field work. Ms. Rodd read the announcement in the newspaper and discussed the situation by telephone with Ace executives. Ace will meet the lower prices that are high enough to cover variable manufacturing and selling expenses but will permit recovery of only a portion of fixed costs.

Item 4: The company's new manufacturing plant building, which cost $2,400,000 and has an estimated life of 25 years, is leased from Wichita National Bank at an annual rental of $600,000. The company is obligated to pay property taxes, insurance, and maintenance. At the conclusion of its 10-year noncancelable lease, the company has the option of purchasing the property for $1. In Ace's income statement, the rental payment is reported on a separate line.

Instructions

For each of the above items, discuss any additional disclosures in the financial statements and notes that the auditor should recommend to her client. (The cumulative effect of the four items should not be considered.)

CT23.3 (LO 1, 2) (Disclosures, Conditional and Contingent Liabilities) Presented below are three independent situations.

Situation 1: A company offers a one-year warranty for the product that it manufactures. A history of warranty claims has been compiled, and the probable amounts of claims related to sales for a given period can be determined.

Situation 2: Subsequent to the date of a set of financial statements but prior to the issuance of the financial statements, a company enters into a contract that will probably result in a significant loss to the company. The amount of the loss can be reasonably estimated.

Situation 3: A company has adopted a policy of recording self-insurance for any possible losses resulting from injury to others by the company's vehicles. The premium for an insurance policy for the same risk from an independent insurance company would have an annual cost of $4,000. During the period covered by the financial statements, there were no accidents involving the company's vehicles that resulted in injury to others.

Instructions

Discuss the accrual or type of disclosure necessary (if any) and the reason(s) why such disclosure is appropriate for each of the three independent sets of facts above.

(AICPA adapted)

CT23.4 (LO 2) Groupwork (Post-Balance-Sheet Events) At December 31, 2025, Coburn Corp. has assets of $10,000,000, liabilities of $6,000,000, common stock of $2,000,000 (representing 2,000,000 shares of $1 par common stock), and retained earnings of $2,000,000. Net sales for the year 2025 were $18,000,000, and net income was $800,000. As auditors of this company, you are making a review of subsequent events on February 13, 2026, and you find the following.

1. On February 3, 2026, one of Coburn's customers declared bankruptcy. At December 31, 2025, this company owed Coburn $300,000, of which $60,000 was paid in January 2026.
2. On January 18, 2026, one of the three major plants of the client burned.
3. On January 23, 2026, a strike was called at one of Coburn's largest plants, which halted 30% of its production. As of today (February 13), the strike has not been settled.

4. A major electronics company has introduced a line of products that would compete directly with Coburn's primary line, now being produced in a specially designed new plant. Because of manufacturing innovations, the competitor has been able to achieve quality similar to that of Coburn's products but at a price 50% lower. Coburn officials say they will meet the lower prices, which are high enough to cover variable manufacturing and selling costs but which permit recovery of only a portion of fixed costs.
5. Merchandise traded in the open market is recorded in the company's records at $1.40 per unit on December 31, 2025. This price had prevailed for 2 weeks, after release of an official market report that predicted vastly enlarged supplies; however, no purchases were made at $1.40. The price throughout the preceding year had been about $2, which was the level experienced over several years. On January 18, 2026, the price returned to $2, after public disclosure of an error in the official calculations of the prior December, correction of which destroyed the expectations of excessive supplies. Inventory at December 31, 2025, was on a lower-of-LIFO-cost-or-market basis.
6. On February 1, 2026, the board of directors adopted a resolution accepting the offer of an investment banker to guarantee the marketing of $1,200,000 of preferred stock.

Instructions

State in each case how the 2025 financial statements would be affected, if at all.

CT23.5 (LO 2) Writing (Segment Reporting) You are compiling the consolidated financial statements for Winsor Corporation International. The corporation's accountant, Anthony Reese, has provided you with the following segment information.

Note 7: Major Segments of Business

WCI conducts funeral service and cemetery operations in the United States and Canada. Substantially all revenues of WCI's major segments of business are from unaffiliated customers. Segment information for: fiscal 2026, 2025, and 2024 follows.

	(thousands)						
	Funeral	**Floral**	**Cemetery**	**Real Estate**	**Dried Whey**	**Limousine**	**Consolidated**
Revenues							
2026	$302,000	$10,000	$ 73,000	$ 2,000	$7,000	$12,000	$406,000
2025	245,000	6,000	61,000	4,000	4,000	4,000	324,000
2024	208,000	3,000	42,000	3,000	1,000	3,000	260,000
Operating Income							
2026	74,000	1,500	18,000	(36,000)	500	2,000	60,000
2025	64,000	200	12,000	(28,000)	200	400	48,800
2024	54,000	150	6,000	(21,000)	100	350	39,600
Capital Expenditures							
2026	26,000	1,000	9,000	400	300	1,000	37,700
2025	28,000	2,000	60,000	1,500	100	700	92,300
2024	14,000	25	8,000	600	25	50	22,700
Depreciation and Amortization							
2026	13,000	100	2,400	1,400	100	200	17,200
2025	10,000	50	1,400	700	50	100	12,300
2024	8,000	25	1,000	600	25	50	9,700
Identifiable Assets							
2026	334,000	1,500	162,000	114,000	500	8,000	620,000
2025	322,000	1,000	144,000	52,000	1,000	6,000	526,000
2024	223,000	500	78,000	34,000	500	3,500	339,500

Instructions

Determine for 2026 which of the above segments must be reported separately and which can be combined under the category "Other." Then, write a one-page memo to the company's accountant, Anthony Reese, explaining the following.

a. What segments must be reported separately and what segments can be combined.

b. What criteria you used to determine reportable segments.

c. What major items for each must be disclosed.

CT23.6 (LO 2) (Segment Reporting—Theory) Presented below is an excerpt from the financial statements of **H. J. Heinz Company**.

Segment and Geographic Data

The company is engaged principally in one line of business—processed food products—which represents over 90% of consolidated sales. Information about the business of the company by geographic area is presented in the table below.

There were no material amounts of sales or transfers between geographic areas or between affiliates, and no material amounts of United States export sales.

		Foreign					
(in thousands of U.S. dollars)	Domestic	United Kingdom	Canada	Western Europe	Other	Total	Worldwide
Sales	$2,381,054	$547,527	$216,726	$383,784	$209,354	$1,357,391	$3,738,445
Operating income	246,780	61,282	34,146	29,146	25,111	149,685	396,465
Identifiable assets	1,362,152	265,218	112,620	294,732	143,971	816,541	2,178,693
Capital expenditures	72,712	12,262	13,790	8,253	4,368	38,673	111,385
Depreciation expense	42,279	8,364	3,592	6,355	3,606	21,917	64,196

Instructions

a. Why does H. J. Heinz not prepare segment information on its products or services?

b. What are export sales, and when should they be disclosed?

c. Why are sales by geographical area important to disclose?

CT23.7 (LO 2) Writing (Segment Reporting—Theory) The following article appeared in the *Wall Street Journal*.

WASHINGTON—The Securities and Exchange Commission staff issued guidelines for companies grappling with the problem of dividing up their business into industry segments for their annual reports.

An industry segment is defined by the Financial Accounting Standards Board as a part of an enterprise engaged in providing a product or service or a group of related products or services primarily to unaffiliated customers for a profit.

Although conceding that the process is a "subjective task" that "to a considerable extent, depends on the judgment of management," the SEC staff said companies should consider . . . various factors . . . to determine whether products and services should be grouped together or reported as segments.

Instructions

a. What does financial reporting for segments of a business involve?

b. Identify the reasons for requiring financial data to be reported by segments.

c. Identify the possible disadvantages of requiring financial data to be reported by segments.

d. Identify the accounting difficulties inherent in segment reporting.

CT23.8 (LO 2) (Interim Reporting) Snider Corporation, a publicly traded company, is preparing the interim financial data which it will issue to its stockholders and the Securities and Exchange Commission (SEC) at the end of the first quarter of the 2025–2026 fiscal year. Snider's financial accounting department has compiled the following summarized revenue and expense data for the first quarter of the year.

Sales revenue	$60,000,000
Cost of goods sold	36,000,000
Variable selling expenses	1,000,000
Fixed selling expenses	3,000,000

Included in the fixed selling expenses was the single lump-sum payment of $2,000,000 for television advertisements for the entire year.

Instructions

a. Snider Corporation must issue its quarterly financial statements in accordance with generally accepted accounting principles regarding interim financial reporting.

1. Explain whether Snider should report its operating results for the quarter as if the quarter were a separate reporting period in and of itself, or as if the quarter were an integral part of the annual reporting period.

2. State how the sales revenue, cost of goods sold, and fixed selling expenses would be reflected in Snider Corporation's quarterly report prepared for the first quarter of the 2025–2026 fiscal year. Briefly justify your presentation.

b. What financial information, at a minimum, must Snider Corporation disclose to its stockholders in its quarterly reports?

(CMA adapted)

CT23.9 (LO 2) Groupwork (Treatment of Various Interim Reporting Situations) The following statement is an excerpt from the FASB pronouncement related to interim reporting.

> Interim financial information is essential to provide investors and others with timely information as to the progress of the enterprise. The usefulness of such information rests on the relationship that it has to the annual results of operations. Accordingly, the Board has concluded that each interim period should be viewed primarily as an integral part of an annual period.
>
> In general, the results for each interim period should be based on the accounting principles and practices used by an enterprise in the preparation of its latest annual financial statements unless a change in an accounting practice or policy has been adopted in the current year. The Board has concluded, however, that certain accounting principles and practices followed for annual reporting purposes may require modification at interim reporting dates so that the reported results for the interim period may better relate to the results of operations for the annual period.

Instructions

The following six independent cases present how accounting facts might be reported on an individual company's interim financial reports. For each of these cases, state whether the method proposed to be used for interim reporting would be acceptable under generally accepted accounting principles applicable to interim financial data. Support each answer with a brief explanation.

a. J. D. Long Company takes a physical inventory at year-end for annual financial statement purposes. Inventory and cost of sales reported in the interim quarterly statements are based on estimated gross profit rates, because a physical inventory would result in a cessation of operations. Long Company does have reliable perpetual inventory records.

b. Rockford Company is planning to report one-fourth of its pension expense each quarter.

c. Republic Company wrote inventory down to reflect lower-of-cost-or-market in the first quarter. At year-end, the market exceeds the original acquisition cost of this inventory. Consequently, management plans to write the inventory back up to its original cost as a year-end adjustment.

d. Gansner Company realized a large gain on the sale of investments at the beginning of the second quarter. The company wants to report one-third of the gain in each of the remaining quarters.

e. Fredonia Company has estimated its annual audit fee. It plans to pro rate this expense equally over all four quarters.

f. LaBrava Company was reasonably certain it would have an employee strike in the third quarter. As a result, it shipped heavily during the second quarter but plans to defer the recognition of the sales in excess of the normal sales volume. The deferred sales will be recognized as sales in the third quarter when the strike is in progress. LaBrava Company management thinks this is more representative of normal second- and third-quarter operations.

CT23.10 (LO 4) Writing (Financial Forecasts) An article in *Barron's* noted the following.

> Okay. Last fall, someone with a long memory and an even longer arm reached into that bureau drawer and came out with a moldy cheese sandwich and the equally moldy notion of corporate forecasts. We tried to find out what happened to the cheese sandwich—but, rats!, even recourse to the Freedom of Information Act didn't help. However, the forecast proposal was dusted off, polished up and found quite serviceable. The SEC, indeed, lost no time in running it up the old flagpole—but no one was very eager to salute. Even after some of the more objectionable features—compulsory corrections and detailed explanations of why the estimates went awry—were peeled off the original proposal.
>
> Seemingly, despite the Commission's smiles and sweet talk, those craven corporations were still afraid that an honest mistake would lead them down the primrose path to consent decrees and class action suits. To lay to rest such qualms, the Commission last week approved a "Safe Harbor" rule that, providing the forecasts were made on a reasonable basis and in good faith, protected corporations from litigation should the projections prove wide of the mark (as only about 99% are apt to do).

Instructions

a. What are the arguments for preparing profit forecasts?

b. What is the purpose of the "safe harbor" rule?

c. Why are corporations concerned about presenting profit forecasts?

CT23.11 (LO 4) Ethics (Disclosure of Estimates) Nancy Tercek, the financial vice president, and Margaret Lilly, the controller, of Romine Manufacturing Company are reviewing the financial ratios of the company for the years 2025 and 2026. The financial vice president notes that the profit margin on sales ratio has increased from 6% to 12%, a hefty gain for the 2-year period. Tercek is in the process of issuing a media release that emphasizes the efficiency of Romine Manufacturing in controlling cost. Margaret Lilly knows that the difference in ratios is due primarily to an earlier company decision to reduce the estimates of warranty and bad debt expense for 2026. The controller, not sure of her supervisor's motives, hesitates to suggest to Tercek that the company's improvement is unrelated to efficiency in controlling cost. To complicate matters, the media release is scheduled in a few days.

Instructions

a. What, if any, is the ethical dilemma in this situation?

b. Should Lilly, the controller, remain silent? Give reasons.

c. What stakeholders might be affected by Tercek's media release?

d. Give your opinion on the following statement and cite reasons: "Because Tercek, the vice president, is most directly responsible for the media release, Lilly has no real responsibility in this matter."

CT23.12 (LO 2) Ethics (Reporting of Subsequent Events) In June 2025, the board of directors for McElroy Enterprises Inc. authorized the sale of $10,000,000 of corporate bonds. Jennifer Grayson, treasurer for McElroy Enterprises Inc., is concerned about the date when the bonds are issued. The company really needs the cash, but she is worried that if the bonds are issued before the company's year-end (December 31, 2025) the additional liability will have an adverse effect on a number of important ratios. In July, she explains to company president William McElroy that if they delay issuing the bonds until after December 31 the bonds will not affect the ratios until December 31, 2026. They will have to report the issuance as a subsequent event which requires only footnote disclosure. Grayson expects that with expected improved financial performance in 2026, ratios should be better.

Instructions

a. What are the ethical issues involved?

b. Should McElroy agree to the delay?

***CT23.13 (LO 6) Groupwork (Effect of Transactions on Financial Statements and Ratios)** The transactions listed below relate to Wainwright Inc. You are to assume that on the date on which each of the transactions occurred, the corporation's accounts showed only common stock ($100 par) outstanding, a current ratio of 2.7:1, and a substantial net income for the year to date (before giving effect to the transaction concerned). On that date, the book value per share of stock was $151.53.

Each numbered transaction is to be considered completely independent of the others, and its related answer should be based on the effect(s) of that transaction alone. Assume that all numbered transactions occurred during 2026 and that the amount involved in each case is sufficiently material to distort reported net income if improperly included in the determination of net income. Assume further that each transaction was recorded in accordance with generally accepted accounting principles and, where applicable, in conformity with the all-inclusive concept of the income statement.

For each of the numbered transactions, you are to decide whether it:

a. Increased the corporation's 2026 net income.

b. Decreased the corporation's 2026 net income.

c. Increased the corporation's total retained earnings directly (i.e., not via net income).

d. Decreased the corporation's total retained earnings directly.

e. Increased the corporation's current ratio.

f. Decreased the corporation's current ratio.

g. Increased each stockholder's proportionate share of total stockholders' equity.

h. Decreased each stockholder's proportionate share of total stockholders' equity.

i. Increased each stockholder's equity per share of stock (book value).

j. Decreased each stockholder's equity per share of stock (book value).

k. Had none of the foregoing effects.

Instructions

List the numbers 1 through 9. Select as many letters as you deem appropriate to reflect the effect(s) of each transaction as of the date of the transaction by printing beside the transaction number the letter(s) that identifies that transaction's effect(s).

Transactions

_____ **1.** In January, the board directed the write-off of certain patent rights that had suddenly and unexpectedly become worthless.

_____ **2.** The corporation sold at a profit land and a building that had been idle for some time. Under the terms of the sale, the corporation received a portion of the sales price in cash immediately, the balance maturing at 6-month intervals.

_____ **3.** Treasury stock originally repurchased and carried at $127 per share was sold for cash at $153 per share.

_____ **4.** The corporation wrote off all of the unamortized discount applicable to bonds that it refinanced in 2026.

_____ **5.** The corporation called in all its outstanding shares of stock and exchanged them for new shares on a 2-for-1 basis, reducing the par value at the same time to $50 per share.

_____ **6.** The corporation paid a cash dividend that had been recorded in the accounts at time of declaration.

_____ **7.** Litigation involving Wainwright Inc. as defendant was settled in the corporation's favor, with the plaintiff paying all court costs and legal fees. In 2023, the corporation had appropriately established a special contingency for this court action. (Indicate the effect of reversing the contingency only.)

_____ **8.** The corporation received a check for the proceeds of an insurance policy from the company with which it is insured against theft of trucks. No entries concerning the theft had been made previously, and the proceeds reduce but do not cover completely the loss.

_____ **9.** Treasury stock, which had been repurchased at and carried at $127 per share, was issued as a stock dividend. In connection with this distribution, the board of directors of Wainwright Inc. had authorized a transfer from retained earnings to permanent capital of an amount equal to the aggregate market value ($153 per share) of the shares issued. No entries relating to this dividend had been made previously.

FASB Codification References

[1] FASB ASC 850-10-05 [Predecessor literature: "Related Party Disclosures," *Statement of Financial Accounting Standards No. 57* (Stamford, Conn.: FASB, 1982).]

[2] FASB ASC 855-10-05 [Predecessor literature: "Subsequent Events," *Statement on Auditing Standards No. 1* (New York: AICPA, 1973), pp. 123–124.]

[3] FASB ASC 280-10-05-3. [Predecessor literature: "Disclosures about Segments of an Enterprise and Related Information," *Statement of Financial Accounting Standards No. 131* (Norwalk, Conn.: FASB, 1997).]

[4] FASB ASC 270-10. [Predecessor literature: "Interim Financial Reporting," *Opinions of the Accounting Principles Board No. 28* (New York: AICPA, 1973).]

[5] FASB ASC 740-270-30-2 through 3. [Predecessor literature: "Interim Financial Reporting," *Opinions of the Accounting Principles Board No. 28* (New York: AICPA, 1973), par. 19.]

[6] FASB ASC 740-270-35-4. [Predecessor literature: "Accounting for Income Taxes in Interim Periods," *FASB Interpretation No. 18* (Stamford, Conn.: FASB, March 1977), par. 9.]

[7] FASB ASC 205-40 [Predecessor literature: "The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern," *Statement on Auditing Standards No. 59* (New York: AICPA, 1988).]

Codification Exercises

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

CE23.1 Access the glossary ("Master Glossary") to answer the following.

a. What is the definition of "ordinary income" (loss)?

b. What is an "error in previously issued financial statements"?

c. What is the definition of "earnings per share"?

d. What is a "publicly traded company"?

CE23.2 What are some examples of related parties?

CE23.3 What are the quantitative thresholds that would require a public company to report separately information about an operating segment?

CE23.4 If an SEC-registered company uses the gross profit method to determine cost of goods sold for interim periods, would it be acceptable for the company to state that it's not practicable to determine components of inventory at interim periods? Why or why not?

Codification Research Case

As part of the year-end audit, you are discussing the disclosure checklist with your client. The checklist identifies the items that must be disclosed in a set of GAAP financial statements. The client is surprised by the disclosure item related to accounting policies. Specifically, since the audit report will attest to the statements being prepared in accordance with GAAP, the client questions the accounting policy checklist item. The client has asked you to conduct some research to verify the accounting policy disclosures.

Instructions

If your school has a subscription to the FASB Codification, log in and prepare responses to the following. Provide Codification references for your responses.

a. In general, what should disclosures of accounting policies encompass?

b. List some examples of the most commonly required accounting policy disclosures.

Additional Professional Resources

Go to Wiley Course Resources for other career-readiness resources, such as career coaching, internship opportunities, and CPAexcel prep.

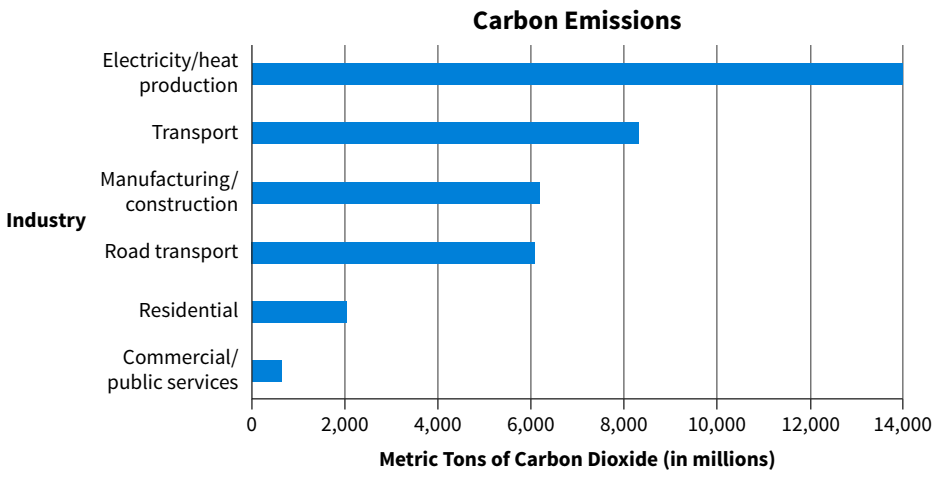
Analytics in Action Activities

Using Data Analytics to Evaluate Nonfinancial Measures

Excel

DA23.1 There is increasing demand for companies to disclose nonfinancial metrics such as carbon emissions, sustainability initiatives, and diversity of human capital. Investors, creditors, and even customers may rely on this information to decide where to allocate their resources.

Creating visualizations in Excel can help us develop insights regarding nonfinancial metrics. For example, the following graph offers a visual of carbon emissions by industry.



Required

You are provided data on carbon emissions by industry to organize, format, and graph using Excel. You will then discuss the relevance of disclosing sustainability-related information and why some companies may be hesitant to report such data.

Go to Wiley Course Resources for complete details and instructions.

Excel

DA23.2 Diversity and inclusion policies are important qualities to consider in a future employer. As you look for your first full-time position, you want to ensure that the company you work for aligns with your personal values. You can use data analytics to help you identify an industry or company that may be a good fit!

Required

You are given data on gender diversity for several companies in the technology industry. Using Excel, you are asked to graph the data and discuss any patterns you observe.

Go to Wiley Course Resources for complete details and instructions.

IFRS Insights

LEARNING OBJECTIVE 10

Compare the disclosure requirements under GAAP and IFRS.

IFRS and GAAP disclosure requirements are similar in many regards. The IFRS addressing various disclosure issues are *IAS 24* ("Related Party Disclosures"), disclosure and recognition of post-statement of financial position events in *IAS 10* ("Events after the Balance Sheet Date"), segment reporting IFRS provisions in *IFRS 8* ("Operating Segments"), and interim reporting requirements in *IAS 34* ("Interim Financial Reporting"). Following are the key similarities and differences between GAAP and IFRS related to disclosures.

Similarities

- GAAP and IFRS have similar standards on post-statement of financial position (subsequent) events. That is, under both sets of standards, events that occurred after the statement of financial position date, and which provide additional evidence of conditions that existed at the statement of financial position date, are recognized in the financial statements.
- Like GAAP, IFRS requires that for transactions with related parties, companies disclose the amounts involved in a transaction; the amount, terms, and nature of the outstanding balances; and any doubtful amounts related to those outstanding balances for each major category of related parties.
- Following the issuance of *IFRS 8*, "Operating Segments," the requirements under IFRS and GAAP are very similar. That is, both standards use the management approach to identify reportable segments, and similar segment disclosures are required.
- Neither GAAP nor IFRS require interim reports. Rather, the SEC and securities exchanges outside the United States establish the rules. In the United States, interim reports generally are provided on a quarterly basis; outside the United States, six-month interim reports are common.

Differences

- Due to the broader range of judgments allowed in more principles-based IFRS, note disclosures generally are more expansive under IFRS compared to GAAP.
- Subsequent (or post-statement of financial position) events under IFRS are evaluated through the date that financial instruments are "authorized for issue." GAAP uses the date when financial statements are "issued." Also, for share dividends and splits in the subsequent period, IFRS does not adjust but GAAP does.
- Under IFRS, there is no specific requirement to disclose the name of the related party, which is the case under GAAP.
- Under IFRS, interim reports are prepared on a discrete basis; GAAP generally follows the integral approach.

Additional IFRS Resources

Additional IFRS Insights with assessment are available online at Wiley Course Resources. For those who want more IFRS coverage, *Intermediate Accounting, IFRS Fourth Edition* exists as another resource.

Appendix A

Private Company Accounting

The FASB has traditionally taken the position that there should be one set of GAAP. However, due to growing concern about differential costs and benefits of a "one size fits all" reporting package, the FASB has considered providing alternative accounting treatments for private companies in areas that include (1) recognition and measurement, (2) presentation and disclosure, and (3) transition methods for financial accounting standards and effective dates. Since 2012, the FASB has worked with the Private Company Council (PCC) to improve the process of setting accounting standards for private companies.

A.1 The Private Company Council (PCC)

Background on the PCC

The PCC is comprised of 9–12 members with balanced representation from private company auditing, preparer, and user communities. The PCC has two principal responsibilities:

1. The PCC determines, using the Private Company Decision-Making Framework (PCC Framework), whether alternatives to existing GAAP are necessary to address the needs of users of private company financial statements.
2. The PCC serves as the primary advisory body to the FASB on the appropriate treatment for private companies for items under active consideration on the FASB's technical agenda.[1]

Following a FASB endorsement process, alternatives for private companies developed by the PCC are incorporated into GAAP.

Private Company Decision-Making Framework

One of the PCC's first responsibilities was to work with the FASB to develop mutually agreed-on criteria for private company alternatives. The result of that joint effort was the *Private Company Decision-Making Framework: A Guide for Evaluating Financial Accounting and Reporting for Private Companies* (the PCC Framework), issued in December 2013. This guide assists the Board and the PCC in determining whether and in what circumstances to provide alternative recognition, measurement, disclosure, display, effective date, and transition guidance for private companies reporting under GAAP.

In making these assessments, the Board and the PCC first should determine whether the alternative recognition or measurement guidance being evaluated provides **relevant information** to users of private company financial statements at a **reasonable cost**. That analysis

[1]The Financial Accounting Foundation (FAF) recently completed a three-year review of the PCC. In response to stakeholder input, the FAF trustees made targeted improvements to increase the PCC's effectiveness without significantly changing the PCC's roles and responsibilities. The changes to the PCC operating procedures will increase the PCC's focus on providing the FASB with private company perspectives on the FASB's active agenda projects. As a result, the PCC will operate in a fashion similar to FASB's other advisory groups [Investors Technical Advisory Committee (ITAC), the Not-for-Profit Advisor Committee (NAC), and the Valuation Resource Group (VRG)], which share their views and expertise with the Board on matters related to projects on the Board's agenda, from the perspectives of various constituencies.

should focus on (a) the relevance of the information in meeting the objective of financial reporting for typical users of private company financial statements, (b) the characteristics that differentiate users of private company financial statements from users of public company financial statements, and (c) the cost and complexity of applying the guidance.

The guide helps the Board and the PCC identify differential information needs of users of public company financial statements and users of private company financial statements, and to identify opportunities to reduce the complexity and costs of preparing financial statements in accordance with GAAP.

PCC Accomplishments

Since its first meeting in December 2012, the PCC has addressed a number of financial accounting and reporting issues that are important to private company stakeholders as well as the wider financial reporting community.

- In addition to developing the PCC Framework, the FASB also issued an Accounting Standards Update on the definition of a public business entity. The FASB and the PCC use that definition to identify the types of companies that are excluded from the scope of the PCC Framework. In general, a company is considered a public business entity if is required to file or furnish financial statements to the SEC or to file or furnish financial statements with a regulatory agency (domestic or foreign) other than the SEC in preparation for the sale of or for purposes of issuing securities.
- The PCC also has become a springboard for efforts to reduce complexity in GAAP for all types of organizations, not just private companies. The FASB has adopted a practice of considering whether any GAAP alternative proposed by the PCC may make sense for public as well as private companies—along with not-for-profit organizations. For example, the FASB issued an Accounting Standards Update to address financial reporting complexity for both public and private development-stage companies.

Two issues addressed by the PCC relate to the accounting for intangible assets and the amortization of goodwill.

A.2 Private Company Alternatives for Intangible Assets and Goodwill

Accounting for Identifiable Intangible Assets

In December 2014, the FASB issued an Accounting Standards Update, developed with the PCC, that provides an alternative to exempt private companies from separately recognizing and measuring non-competition agreements and customer-related intangible assets (such as customer relationships) that are not capable of being sold or licensed independently in a business combination.[2]

Additional Background

As discussed in Chapter 11, in a business combination the acquirer separately recognizes all intangible assets that are **identifiable**, at their acquisition-date fair values. An intangible asset is identifiable if it meets either of the following criteria.

1. It arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

[2]Accounting Standards Update No. 2014-18, *Business Combinations (Topic 805): Accounting for Identifiable Intangible Assets in a Business Combination* (a consensus of the Private Company Council).

2. It is separable, that is, capable of being separated from the company and sold, transferred, licensed, rented, or exchanged, either individually or together with a related contract, identifiable asset, or liability, regardless of whether the company intends to do so.

For example, in the Tractorling example presented in Chapter 11, Diversified included patents (which meet the identifiable definition) in its calculation of the net identifiable assets.

In its reexamination of this accounting for private companies, the PCC found that separate information on certain customer-related intangible assets is not decision-useful because the assets may not be transferable and estimates of their fair values are highly subjective. As a result, the PCC recommended, and the FASB endorsed, an alternative that, if elected, indicates that private company acquirers shall not recognize separately from goodwill the following intangible assets.

- Customer-related intangible assets **unless** they are capable of being sold or licensed independently from other assets of a business.
- Non-competition agreements.

Examples of customer-related intangible assets include (1) mortgage servicing rights, (2) commodity supply contracts, (3) core deposits, and (4) customer information (for example, names and contact information).

Alternative Accounting Example

To illustrate in the context of the Tractorling example in Chapter 11, recall that goodwill is recorded only when an entire business is purchased. To record goodwill, a company compares the fair value of the net tangible and **identifiable intangible assets** with the purchase price of the acquired business. The difference is considered goodwill. Goodwill is the residual—the excess of cost over fair value of the identifiable net assets acquired.

In its acquisition of Tractorling, Diversified determined the fair value of net assets to be $350,000, but it was willing to pay $400,000 due to Tractorling's established reputation, good credit rating, top management team, well-trained employees, and so on. These factors make the value of the business greater than $350,000. Diversified places a premium on the future earning power of these attributes as well as on the basic asset structure of the company today.

Diversified labels the difference between the purchase price of $400,000 and the fair value of net assets of $350,000 as goodwill.

- Goodwill is viewed as one or a group of unidentifiable values (intangible assets), the cost of which "is measured by the difference between the cost of the group of assets or enterprise acquired and the sum of the assigned costs of individual tangible and identifiable intangible assets acquired less liabilities assumed."
- This procedure assumes goodwill covers all the values that cannot be specifically identified with any identifiable tangible or intangible asset.

Illustration A.1 shows this approach.

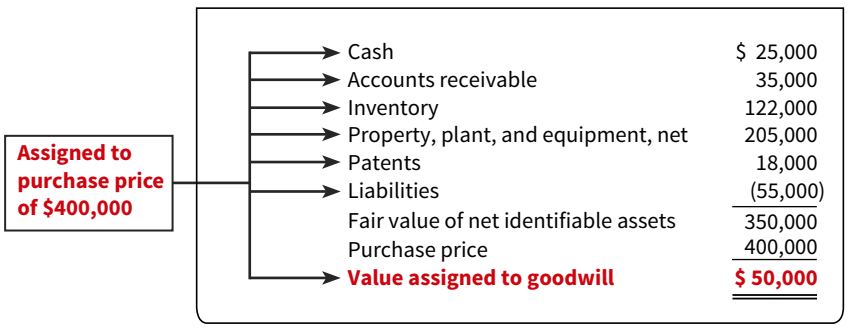

Assigned to purchase price of $400,000
Cash $ 25,000
Accounts receivable 35,000
Inventory 122,000
Property, plant, and equipment, net 205,000
Patents 18,000
Liabilities (55,000)
Fair value of net identifiable assets 350,000
Purchase price 400,000
Value assigned to goodwill $ 50,000

ILLUSTRATION A.1
Determination of Goodwill—Master Valuation Approach

Diversified records this transaction as follows.

Cash	25,000	
Accounts Receivable	35,000	
Inventory	122,000	
Property, Plant, and Equipment	205,000	
Patents	18,000	
Goodwill	50,000	
Liabilities		55,000
Cash		400,000

To illustrate the private company alternative, assume that **instead of patents**, Tractorling employees had a non-compete agreement with Tractorling management that would preclude them from working for any competing companies for one year following the acquisition (with an estimated fair value of $18,000) should they leave the company. Such agreements are common in business combinations to ensure a smooth transition period.

- If Diversified was a public company, as with the patents, it would recognize this non-compete agreement separately from goodwill on the post-acquisition balance sheet.
- However, a private company that chooses the alternative accounting would not recognize a separate intangible asset for the non-compete agreement but instead include the $18,000 in the Goodwill balance.

That is, rather than the entry recorded above, a private company would make the following entry.

Cash	25,000	
Accounts Receivable	35,000	
Inventory	122,000	
Property, Plant, and Equipment	205,000	
Goodwill	68,000	
Liabilities		55,000
Cash		400,000

Note that the Goodwill balance ($50,000 + $18,000) includes the amount attributed to the non-compete agreement. **Private companies that elect this accounting alternative must also elect the private company alternative to amortize goodwill (discussed in the next section).**

Accounting for Goodwill

The FASB also issued guidance developed with the PCC that provides an alternative for private companies in the accounting for goodwill.[3] Under the alternative, rather than considering goodwill to have an indefinite life, private companies can elect to amortize goodwill on a straight-line basis over a period not to exceed 10 years. In addition, goodwill under this alternative will be tested for impairment when a triggering event occurs and based on a comparison of the carrying value of the goodwill to the fair value of the company or reporting unit.

Additional Background

As discussed in Chapter 11, companies consider goodwill to have an indefinite life and therefore should not amortize it. Although goodwill may decrease in value over time, predicting the actual life of goodwill and an appropriate pattern of amortization is extremely difficult. In

[3]Accounting Standards Update No. 2014-02, *Intangibles—Goodwill and Other (Topic 350): Accounting for Goodwill* (a consensus of the Private Company Council).

addition, investors find the amortization charge of little use in evaluating financial performance. Furthermore, the investment community wants to know the amount invested in goodwill, which often is the largest intangible asset on a company's balance sheet. Therefore, companies adjust its carrying value only when goodwill is impaired.

As part of its research and outreach efforts on intangible assets and goodwill, the PCC obtained feedback from private company stakeholders that the benefits of the current accounting for goodwill after initial recognition do not justify the related costs. Feedback from users of private company financial statements indicated that the current goodwill impairment test provides limited decision-useful information because most users of private company financial statements generally disregard goodwill and goodwill impairment losses in their analysis of a private company's financial condition and operating performance.

The PCC also received input from preparers and auditors of private company financial statements indicating concerns about the cost and complexity involved in performing the current goodwill impairment test. Even though the recent introduction of the optional qualitative assessment has provided some cost reduction in testing goodwill for impairment, many of those stakeholders stated that the level of cost reduction has not been significant.

Private Company Alternative

In response to this input, the PCC proposed (and the FASB endorsed) an alternative accounting for private companies. Under the alternative, private companies that elect the accounting alternative will:

1. Amortize goodwill on a straight-line basis over 10 years, or less than 10 years if a shorter useful life is more appropriate.
2. Test goodwill for impairment when a triggering event occurs that indicates that the fair value of a company (or a reporting unit) may be below its carrying amount.

When a triggering event occurs, a company has the option to first assess qualitative factors to determine whether the quantitative impairment test is necessary.

If that qualitative assessment indicates that it is more likely than not that goodwill is impaired, the company must perform the quantitative test to compare the company's fair value with its carrying amount, including goodwill (or the fair value of the reporting unit with the carrying amount, including goodwill, of the reporting unit). If the qualitative assessment indicates that it is not more likely than not that goodwill is impaired, further testing is unnecessary. The goodwill impairment loss cannot exceed the company's (or the reporting unit's) carrying amount of goodwill.

Alternative Accounting Example

To illustrate the accounting under the private company alternative, refer to our Tractorling example in the prior section, in which Diversified recorded goodwill of $68,000 (including the value of the non-compete agreement for Tractorling management). Under the private company alternative, using the maximum life of 10 years, Diversified will amortize goodwill through the following entry each year following the acquisition.

Amortization Expense ($68,000 ÷ 10)	6,800	
Goodwill		6,800

Going forward, the recorded goodwill is evaluated for impairment only if there is a triggering event that indicates that the goodwill's fair value may be less than the carrying value. Thus, the alternative accounting is similar to the accounting for limited-life intangible assets.[4]

[4]As noted, if a private company makes the election to apply the identifiable intangible asset alternative discussed in the prior section, it must also elect the alternative for goodwill amortization and impairment.

A.3 Summary

As reflected in the feedback received in the three-year review, the PCC has generally been graded as a success in helping the FASB respond to private company concerns related to unique user needs and the cost and complexity of applying accounting guidance. In developing the private company alternatives for intangible assets and goodwill, the FASB and PCC was guided by the PCC Framework to assess whether the recognition or measurement guidance being evaluated provides relevant information to users of private company financial statements at a reasonable cost.

While some users may not find the information resulting from applying these alternatives as relevant, the alternatives provide private companies relief from costs associated with estimating the fair value of some identifiable intangibles and annual goodwill impairment tests. That is, amortization will reduce the likelihood of impairments because private companies generally will test goodwill for impairment less frequently.[5]

A recent survey indicates that 16% of approximately 2,900 surveyed private companies have adopted or intend to adopt the goodwill amortization alternatives. The jury is still out on other private company alternatives.[6] Although the PCC has not addressed all of the topics it originally identified as priorities, the topics that remain are generally encompassed by the FASB's simplification initiatives, which are aimed at reducing complexity for both public **and** private companies, or as part of its Disclosure Framework project. You can follow PCC updates at the FASB website.

[5]Based in part on its deliberation of this private company issue, the FASB added a project to its agenda on the subsequent accounting for goodwill for public business entities and not-for-profit entities. That is, some of the same benefits and reduction in cost and complexity associated with goodwill alternatives for private companies may also be relevant to public companies.

[6]PricewaterhouseCoopers, "Representing Private Companies at the FASB: The Next Phase for the PCC," *Point of View* (June 2015).

Appendix B

Specimen Financial Statements: The Procter & Gamble Company

Once each year, a corporation communicates to its stockholders and other interested parties by issuing a complete set of audited financial statements. The **annual report**, as this communication is called, summarizes the financial results of the company's operations for the year and its plans for the future. Many annual reports are attractive, multicolored, glossy public relations pieces, containing pictures of corporate officers and directors as well as photos and descriptions of new products and new buildings. Yet the basic function of every annual report is to report financial information, almost all of which is a product of the corporation's accounting system.

The content and organization of corporate annual reports have become fairly standardized. Excluding the public relations part of the report (pictures, products, etc.), the following are the traditional financial portions of the annual report:

- Financial Highlights
- Letter to the Stockholders
- Management's Discussion and Analysis
- Financial Statements
- Notes to the Financial Statements
- Management's Responsibility for Financial Reporting
- Management's Report on Internal Control over Financial Reporting
- Report of Independent Registered Public Accounting Firm
- Selected Financial Data

The official SEC filing of the annual report is called a **Form 10-K**, which often omits the public relations pieces found in most standard annual reports. On the following pages, we present **The Procter & Gamble Company (P&G)**'s financial statements taken from the company's 2020 Form 10-K. The complete report, including the notes to the financial statements, is available at the company's website.

Consolidated Statements of Earnings

Amounts in millions except per share amounts; Years ended June 30	2020	2019	2018
NET SALES	**$70,950**	$67,684	$66,832
Cost of products sold	**35,250**	34,768	34,432
Selling, general and administrative expense	**19,994**	19,084	19,037
Goodwill and indefinite-lived intangibles impairment charges	**—**	8,345	—
OPERATING INCOME	**15,706**	5,487	13,363
Interest expense	**(465)**	(509)	(506)
Interest income	**155**	220	247
Other non-operating income, net	**438**	871	222
EARNINGS BEFORE INCOME TAXES	**15,834**	6,069	13,326
Income taxes	**2,731**	2,103	3,465
NET EARNINGS	**13,103**	3,966	9,861
Less: Net earnings attributable to noncontrolling interests	**76**	69	111
NET EARNINGS ATTRIBUTABLE TO PROCTER & GAMBLE[1]	**$13,027**	$ 3,897	$ 9,750
NET EARNINGS PER COMMON SHARE:[2]			
Basic	**$ 5.13**	$ 1.45	$ 3.75
Diluted	**$ 4.96**	$ 1.43	$ 3.67

[1]Net earnings attributable to Procter & Gamble in fiscal 2019 was negatively impacted by the impairment charges of $8.3 billion related to Shave Care goodwill and Gillette indefinite-lived intangible assets.
[2]Basic net earnings per common share and Diluted net earnings per common share are calculated on Net earnings attributable to Procter & Gamble.

Consolidated Statements of Comprehensive Income

Amounts in millions; Years ended June 30	2020	2019	2018
NET EARNINGS	**$13,103**	$3,966	$9,861
OTHER COMPREHENSIVE INCOME/(LOSS), NET OF TAX			
Foreign currency translation (net of $59, $78 and $(279) tax, respectively)	**(1,083)**	(213)	(305)
Unrealized gains/(losses) on investment securities (net of $(1), $0 and $0 tax, respectively)	**(12)**	184	(148)
Unrealized gains/(losses) on defined benefit retirement plans (net of $(42), $22 and $68 tax, respectively)	**(150)**	169	334
TOTAL OTHER COMPREHENSIVE INCOME/(LOSS), NET OF TAX	**(1,245)**	140	(119)
TOTAL COMPREHENSIVE INCOME	**11,858**	4,106	9,742
Less: Total comprehensive income attributable to noncontrolling interests	**60**	70	109
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO PROCTER & GAMBLE	**$11,798**	$4,036	$9,633

Consolidated Balance Sheets

Amounts in millions except stated values; As of June 30	2020	2019
Assets		
CURRENT ASSETS		
Cash and cash equivalents	**$ 16,181**	$4,239
Available-for-sale investment securities	**—**	6,048
Accounts receivable	**4,178**	4,951
INVENTORIES		
Materials and supplies	**1,414**	1,289
Work in process	**674**	612
Finished goods	**3,410**	3,116
Total inventories	**5,498**	5,017
Prepaid expenses and other current assets	**2,130**	2,218
TOTAL CURRENT ASSETS	**27,987**	22,473
PROPERTY, PLANT AND EQUIPMENT, NET	**20,692**	21,271
GOODWILL	**39,901**	40,273
TRADEMARKS AND OTHER INTANGIBLE ASSETS, NET	**23,792**	24,215
OTHER NONCURRENT ASSETS	**8,328**	6,863
TOTAL ASSETS	**$120,700**	$115,095
Liabilities and Shareholders' Equity		
CURRENT LIABILITIES		
Accounts payable	**$ 12,071**	$ 11,260
Accrued and other liabilities	**9,722**	9,054
Debt due within one year	**11,183**	9,697
TOTAL CURRENT LIABILITIES	**32,976**	30,011
LONG-TERM DEBT	**23,537**	20,395
DEFERRED INCOME TAXES	**6,199**	6,899
OTHER NONCURRENT LIABILITIES	**11,110**	10,211
TOTAL LIABILITIES	**73,822**	67,516
SHAREHOLDERS' EQUITY		
Convertible Class A preferred stock, stated value $1 per share (600 shares authorized)	**897**	928
Non-Voting Class B preferred stock, stated value $1 per share (200 shares authorized)	**—**	—
Common stock, stated value $1 per share (10,000 shares authorized; shares issued: 2020 – 4,009.2, 2019 – 4,009.2)	**4,009**	4,009
Additional paid-in capital	**64,194**	63,827
Reserve for ESOP debt retirement	**(1,080)**	(1,146)
Accumulated other comprehensive income/(loss)	**(16,165)**	(14,936)
Treasury stock, at cost (shares held: 2020 — 1,529.5, 2019 — 1,504.5)	**(105,573)**	(100,406)
Retained earnings	**100,239**	94,918
Noncontrolling interest	**357**	385
TOTAL SHAREHOLDERS' EQUITY	**46,878**	47,579
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	**$120,700**	$115,095

Consolidated Statements of Shareholders' Equity

Dollars in millions except per share amounts; shares in thousands	Common Stock		Preferred Stock	Additional Paid-In Capital	Reserve for ESOP Debt Retirement	Accumulated Other Comprehensive Income/ (Loss)	Treasury Stock	Retained Earnings	Non-controlling Interest	Total Shareholders' Equity
	Shares	Amount								
BALANCE JUNE 30, 2017	2,553,297	$4,009	$1,006	$63,641	($1,249)	($14,632)	($93,715)	$96,124	$594	$55,778
Net earnings								9,750	111	9,861
Other comprehensive income/(loss)						(117)			(2)	(119)
Dividends and dividend equivalents ($2.7860 per share):										
Common								(7,057)		(7,057)
Preferred, net of tax benefits								(265)		(265)
Treasury stock purchases	(81,439)						(7,004)			(7,004)
Employee stock plans	21,655			199			1,469			1,668
Preferred stock conversions	4,580		(39)	6			33			—
ESOP debt impacts					45			89		134
Noncontrolling interest, net									(113)	(113)
BALANCE JUNE 30, 2018	2,498,093	$4,009	$967	$63,846	($1,204)	($14,749)	($99,217)	$98,641	$590	$52,883
Impact of adoption of new accounting standards						(326)		(200)	(27)	(553)
Net earnings								3,897	69	3,966
Other comprehensive income/(loss)						139			1	140
Dividends and dividend equivalents ($2.8975 per share):										
Common								(7,256)		(7,256)
Preferred, net of tax benefits								(263)		(263)
Treasury stock purchases	(53,714)						(5,003)			(5,003)
Employee stock plans	55,734			93			3,781			3,874
Preferred stock conversions	4,638		(39)	6			33			—
ESOP debt impacts					58			99		157
Noncontrolling interest, net				(118)					(248)	(366)
BALANCE JUNE 30, 2019	2,504,751	$4,009	$928	$63,827	($1,146)	($14,936)	($100,406)	$94,918	$385	$47,579
Net earnings								**13,027**	**76**	**13,103**
Other comprehensive income/(loss)						**(1,229)**			**(16)**	**(1,245)**
Dividends and dividend equivalents ($3.0284 per share):										
Common								**(7,551)**		**(7,551)**
Preferred, net of tax benefits								**(263)**		**(263)**
Treasury stock purchases	**(61,346)**						**(7,405)**			**(7,405)**
Employee stock plans	**32,603**			**362**			**2,212**			**2,574**
Preferred stock conversions	**3,738**		**(31)**	**5**			**26**			—
ESOP debt impacts					**66**			**108**		**174**
Noncontrolling interest, net									**(88)**	**(88)**
BALANCE JUNE 30, 2020	**2,479,746**	**$4,009**	**$897**	**$64,194**	**($1,080)**	**($16,165)**	**($105,573)**	**$100,239**	**$357**	**$46,878**

Consolidated Statements of Cash Flows

Amounts in millions; Years ended June 30	2020	2019	2018
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, BEGINNING OF YEAR	**$ 4,239**	$2,569	$5,569
OPERATING ACTIVITIES			
Net earnings	**13,103**	3,966	9,861
Depreciation and amortization	**3,013**	2,824	2,834
Loss on early extinguishment of debt	**—**	—	346
Share-based compensation expense	**558**	515	395
Deferred income taxes	**(596)**	(411)	(1,844)
Loss/(gain) on sale of assets	**7**	(678)	(176)
Goodwill and indefinite-lived intangible impairment charges	**—**	8,345	—
Change in accounts receivable	**634**	(276)	(177)
Change in inventories	**(637)**	(239)	(188)
Change in accounts payable, accrued and other liabilities	**1,923**	1,856	1,385
Change in other operating assets and liabilities	**(710)**	(973)	2,000
Other	**108**	313	431
TOTAL OPERATING ACTIVITIES	**17,403**	15,242	14,867
INVESTING ACTIVITIES			
Capital expenditures	**(3,073)**	(3,347)	(3,717)
Proceeds from asset sales	**30**	394	269
Acquisitions, net of cash acquired	**(58)**	(3,945)	(109)
Purchases of short-term investments	**—**	(158)	(3,909)
Proceeds from sales and maturities of investment securities	**6,151**	3,628	3,928
Change in other investments	**(5)**	(62)	27
TOTAL INVESTING ACTIVITIES	**3,045**	(3,490)	(3,511)
FINANCING ACTIVITIES			
Dividends to shareholders	**(7,789)**	(7,498)	(7,310)
Increases/(reductions) in short-term debt	**2,345**	(2,215)	(3,437)
Additions to long-term debt	**4,951**	2,367	5,072
Reductions of long-term debt[1]	**(2,447)**	(969)	(2,873)
Treasury stock purchases	**(7,405)**	(5,003)	(7,004)
Impact of stock options and other	**1,978**	3,324	1,177
TOTAL FINANCING ACTIVITIES	**(8,367)**	(9,994)	(14,375)
EFFECT OF EXCHANGE RATE CHANGES ON CASH, CASH EQUIVALENTS AND RESTRICTED CASH	**(139)**	(88)	19
CHANGE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	**11,942**	1,670	(3,000)
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, END OF YEAR	**$16,181**	$4,239	$ 2,569
SUPPLEMENTAL DISCLOSURE			
Cash payments for interest	**$ 434**	$497	$529
Cash payment for income taxes	**3,550**	3,064	2,830
Assets acquired through non-cash finance leases are immaterial for all periods.			

[1]Includes early extinguishment of debt costs of $346 in 2018.

Specimen Financial Statements: The Coca-Cola Company

The Coca-Cola Company is the world's largest beverage company. It owns or licenses and markets more than 500 nonalcoholic beverage brands, primarily sparkling beverages, but also a variety of still beverages such as waters, enhanced waters, juices and juice drinks, ready-to-drink teas and coffees, and energy and sports drinks. Finished beverage products bearing Coca-Cola trademarks, sold in the United States since 1886, are now available in more than 200 countries.

The following are Coca-Cola's financial statements as presented in its 2020 10-K report. The complete report, including notes to the financial statements, is available at the company's website.

THE COCA-COLA COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(In millions except per share data)

Year Ended December 31,	**2020**	2019	2018
Net Operating Revenues	**$33,014**	$37,266	$34,300
Cost of goods sold	**13,433**	14,619	13,067
Gross Profit	**19,581**	22,647	21,233
Selling, general and administrative expenses	**9,731**	12,103	11,002
Other operating charges	**853**	458	1,079
Operating Income	**8,997**	10,086	9,152
Interest income	**370**	563	689
Interest expense	**1,437**	946	950
Equity income (loss)—net	**978**	1,049	1,008
Other income (loss)—net	**841**	34	(1,674)
Income Before Income Taxes	**9,749**	10,786	8,225
Income taxes	**1,981**	1,801	1,749
Consolidated Net Income	**7,768**	8,985	6,476
Less: Net income (loss) attributable to noncontrolling interests	**21**	65	42
Net Income Attributable to Shareowners of The Coca-Cola Company	**$ 7,747**	$ 8,920	$ 6,434
Basic Net Income Per Share[1]	**$ 1.80**	$ 2.09	$ 1.51
Diluted Net Income Per Share[1]	**$ 1.79**	$ 2.07	$ 1.50
Average Shares Outstanding—Basic	**4,295**	4,276	4,259
Effect of dilutive securities	**28**	38	40
Average Shares Outstanding—Diluted	**4,323**	4,314	4,299

[1]Calculated based on net income attributable to shareowners of The Coca-Cola Company.

THE COCA-COLA COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

Year Ended December 31,	**2020**	2019	2018
Consolidated Net Income	**$ 7,768**	$8,985	$6,476
Other Comprehensive Income:			
Net foreign currency translation adjustments	**(911)**	74	(2,035)
Net gains (losses) on derivatives	**15**	(54)	(7)
Net change in unrealized gains (losses) on available-for-sale debt securities	**(47)**	18	(34)
Net change in pension and other postretirement benefit liabilities	**(267)**	(159)	29
Total Comprehensive Income	**6,558**	8,864	4,429
Less: Comprehensive income attributable to noncontrolling interests	**(132)**	110	95
Total Comprehensive Income Attributable to Shareowners of The Coca-Cola Company	**$6,690**	$8,754	$4,334

THE COCA-COLA COMPANY AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In millions except par value)

December 31,	**2020**	2019
ASSETS		
Current Assets		
Cash and cash equivalents	**$ 6,795**	$ 6,480
Short-term investments	**1,771**	1,467
Total Cash, Cash Equivalents and Short-Term Investments	**8,566**	7,947
Marketable securities	**2,348**	3,228
Trade accounts receivable, less allowances of $526 and $524, respectively	**3,144**	3,971
Inventories	**3,266**	3,379
Prepaid expenses and other assets	**1,916**	1,886
Total Current Assets	**19,240**	20,411
Equity method investments	**19,273**	19,025
Other investments	**812**	854
Other assets	**6,184**	6,075
Deferred income tax assets	**2,460**	2,412
Property, plant and equipment—net	**10,777**	10,838
Trademarks with indefinite lives	**10,395**	9,266
Goodwill	**17,506**	16,764
Other intangible assets	**649**	736
Total Assets	**$87,296**	$86,381
LIABILITIES AND EQUITY		
Current Liabilities		
Accounts payable and accrued expenses	**$11,145**	$11,312
Loans and notes payable	**2,183**	10,994
Current maturities of long-term debt	**485**	4,253
Accrued income taxes	**788**	414
Total Current Liabilities	**14,601**	26,973
Long-term debt	**40,125**	27,516
Other liabilities	**9,453**	8,510
Deferred income tax liabilities	**1,833**	2,284
The Coca-Cola Company Shareowners' Equity		
Common stock, $0.25 par value; authorized—11,200 shares; issued—7,040 shares	**1,760**	1,760
Capital surplus	**17,601**	17,154
Reinvested earnings	**66,555**	65,855
Accumulated other comprehensive income (loss)	**(14,601)**	(13,544)
Treasury stock, at cost—2,738 and 2,760 shares, respectively	**(52,016)**	(52,244)
Equity Attributable to Shareowners of The Coca-Cola Company	**19,299**	18,981
Equity attributable to noncontrolling interests	**1,985**	2,117
Total Equity	**21,284**	21,098
Total Liabilities and Equity	**$87,296**	$86,381

THE COCA-COLA COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

Year Ended December 31,	**2020**	2019	2018
Operating Activities			
Consolidated net income	**$ 7,768**	$ 8,985	$ 6,476
Depreciation and amortization	**1,536**	1,365	1,086
Stock-based compensation expense	**126**	201	225
Deferred income taxes	**(18)**	(280)	(413)
Equity (income) loss—net of dividends	**(511)**	(421)	(457)
Foreign currency adjustments	**(88)**	91	(50)
Significant (gains) losses—net	**(914)**	(467)	743
Other operating charges	**556**	127	558
Other items	**699**	504	699
Net change in operating assets and liabilities	**690**	366	(1,240)
Net Cash Provided by Operating Activities	**9,844**	10,471	7,627
Investing Activities			
Purchases of investments	**(13,583)**	(4,704)	(7,789)
Proceeds from disposals of investments	**13,835**	6,973	14,977
Acquisitions of businesses, equity method investments and nonmarketable securities	**(1,052)**	(5,542)	(1,263)
Proceeds from disposals of businesses, equity method investments and nonmarketable securities	**189**	429	1,362
Purchases of property, plant and equipment	**(1,177)**	(2,054)	(1,548)
Proceeds from disposals of property, plant and equipment	**189**	978	248
Other investing activities	**122**	(56)	(60)
Net Cash Provided by (Used in) Investing Activities	**(1,477)**	(3,976)	5,927
Financing Activities			
Issuances of debt	**26,934**	23,009	27,605
Payments of debt	**(28,796)**	(24,850)	(30,600)
Issuances of stock	**647**	1,012	1,476
Purchases of stock for treasury	**(118)**	(1,103)	(1,912)
Dividends	**(7,047)**	(6,845)	(6,644)
Other financing activities	**310**	(227)	(272)
Net Cash Provided by (Used in) Financing Activities	**(8,070)**	(9,004)	(10,347)
Effect of Exchange Rate Changes on Cash, Cash Equivalents, Restricted Cash and Restricted Cash Equivalents	**76**	(72)	(262)
Cash, Cash Equivalents, Restricted Cash and Restricted Cash Equivalents			
Net increase (decrease) in cash, cash equivalents, restricted cash and restricted cash equivalents during the year	**373**	(2,581)	2,945
Cash, cash equivalents, restricted cash and restricted cash equivalents at beginning of year	**6,737**	9,318	6,373
Cash, Cash Equivalents, Restricted Cash and Restricted Cash Equivalents at End of Year	**7,110**	6,737	9,318
Less: Restricted cash and restricted cash equivalents at end of year	**315**	257	241
Cash and Cash Equivalents at End of Year	**$ 6,795**	$ 6,480	$ 9,077

THE COCA-COLA COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREOWNERS' EQUITY
(In millions except per share data)

Year Ended December 31,	**2020**	2019	2018
Equity Attributable to Shareowners of The Coca-Cola Company			
Number of Common Shares Outstanding			
Balance at beginning of year	**4,280**	4,268	4,259
Treasury stock issued to employees related to stock-based compensation plans	**22**	33	48
Purchases of stock for treasury	**—**	(21)	(39)
Balance at end of year	**4,302**	4,280	4,268
Common Stock	**$ 1,760**	$ 1,760	$ 1,760
Capital Surplus			
Balance at beginning of year	**17,154**	16,520	15,864
Stock issued to employees related to stock-based compensation plans	**307**	433	467
Stock-based compensation expense	**141**	201	225
Other activities	**(1)**	—	(36)
Balance at end of year	**17,601**	17,154	16,520
Reinvested Earnings			
Balance at beginning of year	**65,855**	63,234	60,430
Adoption of accounting standards[1]	**—**	546	3,014
Net income attributable to shareowners of The Coca-Cola Company	**7,747**	8,920	6,434
Dividends (per share—$1.64, $1.60 and $1.56 in 2020, 2019 and 2018, respectively)	**(7,047)**	(6,845)	(6,644)
Balance at end of year	**66,555**	65,855	63,234
Accumulated Other Comprehensive Income (Loss)			
Balance at beginning of year	**(13,544)**	(12,814)	(10,305)
Adoption of accounting standards[1]	**—**	(564)	(409)
Net other comprehensive income (loss)	**(1,057)**	(166)	(2,100)
Balance at end of year	**(14,601)**	(13,544)	(12,814)
Treasury Stock			
Balance at beginning of year	**(52,244)**	(51,719)	(50,677)
Treasury stock issued to employees related to stock-based compensation plans	**228**	501	704
Purchases of stock for treasury	**—**	(1,026)	(1,746)
Balance at end of year	**(52,016)**	(52,244)	(51,719)
Total Equity Attributable to Shareowners of The Coca-Cola Company	**$ 19,299**	$18,981	$16,981
Equity Attributable to Noncontrolling Interests			
Balance at beginning of year	**$ 2,117**	$ 2,077	$ 1,905
Net income attributable to noncontrolling interests	**21**	65	42
Net foreign currency translation adjustments	**(153)**	45	53
Dividends paid to noncontrolling interests	**(18)**	(48)	(31)
Acquisition of interests held by noncontrolling owners	**—**	(84)	—
Contributions by noncontrolling interests	**17**	3	—
Business combinations	**1**	59	101
Other activities	**—**	—	7
Total Equity Attributable to Noncontrolling Interests	**$ 1,985**	$ 2,117	$ 2,077

[1]Refer to Note 1 and Note 5.

Specimen Financial Statements:
PepsiCo, Inc.

PepsiCo, Inc. is a leading global food and beverage company with a complementary portfolio of enjoyable brands, including Frito-Lay, Gatorade, Pepsi-Cola, Quaker, and Tropicana. Through its operations, authorized bottlers, contract manufacturers, and other third parties, PepsiCo makes, markets, distributes, and sells a wide variety of convenient and enjoyable beverages, foods, and snacks, serving customers and consumers in more than 200 countries and territories.

The following are PepsiCo's financial statements as presented in its 2020 10-K report. The complete report, including notes to the financial statements, is available at the company's website.

Consolidated Statement of Income
PepsiCo, Inc. and Subsidiaries
Fiscal years ended December 26, 2020, December 28, 2019 and December 29, 2018
(in millions except per share amounts)

	2020	2019	2018
Net Revenue	**$ 70,372**	$67,161	$64,661
Cost of sales	**31,797**	30,132	29,381
Gross profit	**38,575**	37,029	35,280
Selling, general and administrative expenses	**28,495**	26,738	25,170
Operating Profit	**10,080**	10,291	10,110
Other pension and retiree medical benefits income/(expense)	**117**	(44)	298
Net interest expense and other	**(1,128)**	(935)	(1,219)
Income before income taxes	**9,069**	9,312	9,189
Provision for/(benefit from) income taxes (See Note 5)	**1,894**	1,959	(3,370)
Net income	**7,175**	7,353	12,559
Less: Net income attributable to noncontrolling interests	**55**	39	44
Net Income Attributable to PepsiCo	**$ 7,120**	$ 7,314	$12,515
Net Income Attributable to PepsiCo per Common Share			
Basic	**$ 5.14**	$ 5.23	$ 8.84
Diluted	**$ 5.12**	$ 5.20	$ 8.78
Weighted-average common shares outstanding			
Basic	**1,385**	1,399	1,415
Diluted	**1,392**	1,407	1,425

Consolidated Statement of Comprehensive Income
PepsiCo, Inc. and Subsidiaries
Fiscal years ended December 26, 2020, December 28, 2019 and December 29, 2018
(in millions)

	2020	2019	2018
Net income	**$7,175**	$ 7,353	$12,559
Other comprehensive (loss)/income, net of taxes:			
Net currency translation adjustment	**(650)**	628	(1,641)
Net change on cash flow hedges	**7**	(90)	40
Net pension and retiree medical adjustments	**(532)**	283	(467)
Other	**(1)**	(2)	6
	(1,176)	819	(2,062)
Comprehensive income	**5,999**	8,172	10,497
Less: Comprehensive income attributable to noncontrolling interests	**55**	39	44
Comprehensive Income Attributable to PepsiCo	**$5,944**	$ 8,133	$10,453

Consolidated Statement of Cash Flows
PepsiCo, Inc. and Subsidiaries
Fiscal years ended December 26, 2020, December 28, 2019 and December 29, 2018
(in millions)

	2020	2019	2018
Operating Activities			
Net income	**$ 7,175**	$ 7,353	$12,559
Depreciation and amortization	**2,548**	2,432	2,399
Share-based compensation expense	**264**	237	256
Restructuring and impairment charges	**289**	370	308
Cash payments for restructuring charges	**(255)**	(350)	(255)
Inventory fair value adjustments and merger and integration charges	**255**	55	75
Cash payments for merger and integration charges	**(131)**	(10)	(73)
Pension and retiree medical plan expenses	**408**	519	221
Pension and retiree medical plan contributions	**(562)**	(716)	(1,708)
Deferred income taxes and other tax charges and credits	**361**	453	(531)
Net tax related to the TCJ Act	**—**	(8)	(28)
Tax payments related to the TCJ Act	**(78)**	(423)	(115)
Other net tax benefits related to international reorganizations	**—**	(2)	(4,347)
Change in assets and liabilities:			
Accounts and notes receivable	**(420)**	(650)	(253)
Inventories	**(516)**	(190)	(174)
Prepaid expenses and other current assets	**26**	(87)	**9**
Accounts payable and other current liabilities	**766**	735	882
Income taxes payable	**(159)**	(287)	448
Other, net	**642**	218	(258)
Net Cash Provided by Operating Activities	**10,613**	9,649	9,415
Investing Activities			
Capital spending	**(4,240)**	(4,232)	(3,282)
Sales of property, plant and equipment	**55**	170	134
Acquisitions, net of cash acquired, and investments in noncontrolled affiliates	**(6,372)**	(2,717)	(1,496)
Divestitures	**4**	253	505
Short-term investments, by original maturity:			
More than three months - purchases	**(1,135)**	**—**	(5,637)
More than three months - maturities	**—**	16	12,824
More than three months - sales	**—**	62	1,498
Three months or less, net	**27**	19	16
Other investing, net	42	(8)	2
Net Cash (Used for)/Provided by Investing Activities	**(11,619)**	(6,437)	4,564

(continues)

	2020	2019	2018
Financing Activities			
Proceeds from issuances of long-term debt	**$13,809**	$ 4,621	$ —
Payments of long-term debt	**(1,830)**	(3,970)	(4,007)
Debt redemption/cash tender and exchange offers	**(1,100)**	(1,007)	(1,589)
Short-term borrowings, by original maturity:			
More than three months - proceeds	**4,077**	6	3
More than three months - payments	**(3,554)**	(2)	(17)
Three months or less, net	**(109)**	(3)	(1,352)
Cash dividends paid	**(5,509)**	(5,304)	(4,930)
Share repurchases - common	**(2,000)**	(3,000)	(2,000)
Proceeds from exercises of stock options	**179**	329	281
Withholding tax payments on restricted stock units (RSUs), performance stock units (PSUs) and PepsiCo equity performance units (PEPunits) converted	**(96)**	(114)	(103)
Other financing	**(48)**	(45)	(55)
Net Cash Provided by/(Used for) Financing Activities	**3,819**	(8,489)	(13,769)
Effect of exchange rate changes on cash and cash equivalents and restricted cash	**(129)**	78	(98)
Net Increase/(Decrease) in Cash and Cash Equivalents and Restricted Cash	**2,684**	(5,199)	112
Cash and Cash Equivalents and Restricted Cash, Beginning of Year	**5,570**	10,769	10,657
Cash and Cash Equivalents and Restricted Cash, End of Year	**$ 8,254**	$ 5,570	$ 10,769

Consolidated Balance Sheet
PepsiCo, Inc. and Subsidiaries
December 26, 2020 and December 28, 2019
(in millions except per share amounts)

	2020	2019
ASSETS		
Current Assets		
Cash and cash equivalents	**$ 8,185**	$ 5,509
Short-term investments	**1,366**	229
Accounts and notes receivable, net	**8,404**	7,822
Inventories	**4,172**	3,338
Prepaid expenses and other current assets	**874**	747
Total Current Assets	**23,001**	17,645
Property, Plant and Equipment, net	**21,369**	19,305
Amortizable Intangible Assets, net	**1,703**	1,433
Goodwill	**18,757**	15,501
Other Indefinite-Lived Intangible Assets	**17,612**	14,610
Investments in Noncontrolled Affiliates	**2,792**	2,683
Deferred Income Taxes	**4,372**	4,359
Other Assets	**3,312**	3,011
Total Assets	**$92,918**	$ 78,547
LIABILITIES AND EQUITY		
Current Liabilities		
Short-term debt obligations	**$ 3,780**	$ 2,920
Accounts payable and other current liabilities	**19,592**	17,541
Total Current Liabilities	**23,372**	20,461
Long-Term Debt Obligations	**40,370**	29,148
Deferred Income Taxes	**4,284**	4,091
Other Liabilities	**11,340**	9,979
Total Liabilities	**79,366**	63,679
Commitments and contingencies		
PepsiCo Common Shareholders' Equity		
Common stock, par value 1 2/3 ¢ per share (authorized 3,600 shares; issued, net of repurchased common stock at par value: 1,380 and 1,391 shares, respectively)	**23**	23
Capital in excess of par value	**3,910**	3,886
Retained earnings	**63,443**	61,946
Accumulated other comprehensive loss	**(15,476)**	(14,300)
Repurchased common stock, in excess of par value (487 and 476 shares, respectively)	**(38,446)**	(36,769)
Total PepsiCo Common Shareholders' Equity	**13,454**	14,786
Noncontrolling interests	**98**	82
Total Equity	**13,552**	14,868
Total Liabilities and Equity	**$92,918**	$ 78,547

Consolidated Statement of Equity
PepsiCo, Inc. and Subsidiaries
Fiscal years ended December 26, 2020, December 28, 2019 and December 29, 2018
(in millions except per share amounts)

	2020		2019		2018	
	Shares	**Amount**	Shares	Amount	Shares	Amount
Preferred Stock						
Balance, beginning of year	**—**	**$ —**	—	$ —	0.8	$ 41
Conversion to common stock	**—**	**—**	—	—	(0.1)	(6)
Retirement of preferred stock	**—**	**—**	—	—	(0.7)	(35)
Balance, end of year	**—**	**—**	—	—	—	—
Repurchased Preferred Stock						
Balance, beginning of year	**—**	**—**	—	—	(0.7)	(197)
Redemptions	**—**	**—**	—	—	—	(2)
Retirement of preferred stock	**—**	**—**	—	—	0.7	199
Balance, end of year	**—**	**—**	—	—	—	—
Common Stock						
Balance, beginning of year	**1,391**	**23**	1,409	23	1,420	24
Shares issued in connection with preferred stock conversion to common stock	**—**	**—**	—	—	1	—
Change in repurchased common stock	**(11)**	**—**	(18)	—	(12)	(1)
Balance, end of year	**1,380**	**23**	1,391	23	1,409	23
Capital in Excess of Par Value						
Balance, beginning of year		**3,886**		3,953		3,996
Share-based compensation expense		**263**		235		250
Equity issued in connection with preferred stock conversion to common stock		**—**		—		6
Stock option exercises, RSUs, PSUs and PEPunits converted		**(143)**		(188)		(193)
Withholding tax on RSUs, PSUs and PEPunits converted		**(96)**		(114)		(103)
Other		**—**		—		(3)
Balance, end of year		**3,910**		3,886		3,953
Retained Earnings						
Balance, beginning of year		**61,946**		59,947		52,839
Cumulative effect of accounting changes		**(34)**		8		(145)
Net income attributable to PepsiCo		**7,120**		7,314		12,515
Cash dividends declared - common[a]		**(5,589)**		(5,323)		(5,098)
Retirement of preferred stock		**—**		—		(164)
Balance, end of year		**63,443**		61,946		59,947
Accumulated Other Comprehensive Loss						
Balance, beginning of year		**(14,300)**		(15,119)		(13,057)
Other comprehensive (loss)/income attributable to PepsiCo		**(1,176)**		819		(2,062)
Balance, end of year		**(15,476)**		(14,300)		(15,119)
Repurchased Common Stock						
Balance, beginning of year	**(476)**	**(36,769)**	(458)	(34,286)	(446)	(32,757)
Share repurchases	**(15)**	**(2,000)**	(24)	(3,000)	(18)	(2,000)
Stock option exercises, RSUs, PSUs and PEPunits converted	**4**	**322**	6	516	6	469
Other	**—**	**1**	—	1	—	2
Balance, end of year	**(487)**	**(38,446)**	(476)	(36,769)	(458)	(34,286)
Total PepsiCo Common Shareholders' Equity		**13,454**		14,786		14,518
Noncontrolling Interests						
Balance, beginning of year		**82**		84		92
Net income attributable to noncontrolling interests		**55**		39		44
Distributions to noncontrolling interests		**(44)**		(42)		(49)
Acquisitions		**5**		—		—
Other, net		**—**		1		(3)
Balance, end of year		**98**		82		84
Total Equity		**$13,552**		$14,868		$ 14,602

[a]Cash dividends declared per common share were $4.0225, $3.7925 and $3.5875 for 2020, 2019 and 2018, respectively.

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Intermediate Accounting 18E: List of Accounts

A

Accounts Payable
Accounts Receivable
Accrued Liabilities
Accumulated Depreciation
Accumulated Depreciation—Buildings
Accumulated Depreciation—Equipment
Accumulation Depreciation—Machinery
Accumulated Depreciation—Plant Assets
Accumulated Depreciation—Trucks
Adjustment to Record Inventory at Cost
Administrative Expenses
Admissions Revenue
Advances to Employees
Advertising Expense
Allowance for Doubtful Accounts
Allowance for Expropriation
Allowance for Sales Returns and Allowances
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value
Allowance to Reduce Inventory to LIFO
Allowance to Reduce Inventory to Market
Amortization Expense
Asset Retirement Obligation

B

Bad Debt Expense
Billings on Construction in Process
Bond Issue Expense
Bond Sinking Fund
Bonds Payable
Buildings

C

Call Option
Cash
Cash Over and Short
Cash Surrender Value of Life Insurance
Coal Mine
Commission Expense
Commission Payable
Commission Revenue
Common Stock
Common Stock Dividend Distributable
Compensation Expense
Computer Software Costs
Construction Expenses
Construction in Process
Contract Asset
Contract Liability
Contribution Expense
Contribution Revenue
Convertible Preferred Stock
Copyrights
Cost of Goods Sold
Cost of Installment Sales
Costs of Construction
Current Maturity of Long-Term Debt

D

Dealer's Fund Reserve
Debt Conversion Expense
Debt Investments
Deferred Gross Profit
Deferred Tax Asset
Deferred Tax Liability
Delivery Expense
Depreciation Expense
Direct Labor
Discount on Bonds Payable
Discount on Notes Payable
Discount on Notes Receivable
Dividend Receivable
Dividend Revenue
Dividends
Dividends Payable
Due from Factor
Due to Customer
Dues Revenue

E

Entertainment Expense
Equipment
Equity Investments
Estimated Inventory Returns
Estimated Liability on Purchase Commitments
Executory Costs
Executory Costs Payable

F

Factory Overhead
Fair Value Adjustment
FICA Taxes Payable
Finance Charge
Finance Expense
Finance Revenue
Finished Goods Inventory
Franchise Revenue
Franchises
Freight-In
Freight-Out
FUTA Taxes Payable
Futures Contract

G

Gain on Disposal of Equipment
Gain on Disposal of Land
Gain on Disposal of Machinery
Gain on Disposal of Plant Assets
Gain on Disposal of Trucks
Gain on Redemption of Bonds
Gain on Repossession
Gain on Restructuring of Debt
Gain on Sale of Investments
Gain on Sale of Land
Gain on Sale of Machinery
Gain on Sale of Plant Assets
Gain on Settlement of ARO
Goodwill
Green Fees Revenue

I

Income Summary
Income Tax Expense
Income Taxes Payable
Income Taxes Receivable
Income Tax Refund Receivable
Installment Accounts Receivable
Installment Sales Revenue
Insurance Expense
Insurance Premium Payable
Insurance Revenue
Intangible Assets
Interest Expense
Interest Payable
Interest Receivable
Interest Revenue
Inventory
Inventory on Consignment
Inventory Over and Short
Investment Revenue
Investments
Investments in Common Stock
Investments in Stocks and Bonds

L

Land
Land Improvements
Lawsuit Liability
Lawsuit Loss
Lease Liability
Lease Receivable
Leased Buildings
Leased Equipment
Liability under Stock-Appreciation Plan
Litigation Expense or Loss
Litigation Liability
Loss Due to Market Decline of Inventory
Loss from Expropriation
Loss from Long-Term Contracts
Loss on ARO Settlement
Loss on Capital Lease
Loss on Disposal of Equipment
Loss on Disposal of Land
Loss on Disposal of Machinery
Loss on Disposal of Plant Assets
Loss on Disposal of Trucks
Loss on Impairment
Loss on Investments
Loss on Plant Assets
Loss on Redemption of Bonds
Loss on Repossession
Loss on Sale of Investments

Loss on Sale of Receivables
Loss on Settlement of Call Option
Loss on Settlement of Put Option

M

Machinery
Maintenance and Repairs Expense
Materials
Memo entry
Miscellaneous Expense
Mortgage Payable

N

No entry
Noncontrolling Interest
Notes Payable
Notes Receivable

O

Office Expense
Oil Platform
Operating Expenses
Organization Expense
Other Comprehensive Income (G/L)
Other Comprehensive Income (PSC)
Other Expense
Other Revenue
Owner's Capital
Owner's Drawings

P

Paid-in Capital from Treasury Stock
Paid-in Capital in Excess of Par—Common Stock
Paid-in Capital in Excess of Par—Preferred Stock
Paid-in Capital in Excess of Stated Value—Common Stock
Paid-in Capital—Expired Stock Options
Paid-in Capital—Stock Options
Paid-in Capital—Stock Warrants
Patents
Payroll Tax Expense
Payroll Taxes Payable
Pension Asset/Liability
Pension Expense
Pension Obligation
Petty Cash
Plant Assets
Postage Expense
Postretirement Asset/Liability
Postretirement Expense
Preferred Stock
Premium Expense
Premium Inventory
Premium Liability
Premium on Bonds Payable
Prepaid Advertising
Prepaid Expenses
Prepaid Insurance
Prepaid Lease Executory Costs
Prepaid Rent
Property Dividends Payable
Property Tax Expense
Property Taxes Payable
Purchase Discounts
Purchase Discounts Lost
Purchase Returns and Allowances
Purchases
Put Option

R

Raw Materials
Realized Gross Profit
Recourse Liability
Recovery of Loss from Impairment
Refundable Deposit Liability
Refund Liability
Rent Expense
Rent Payable
Rent Receivable
Rent Revenue
Repossessed Merchandise
Research and Development Expense
Restricted Cash
Retained Earnings
Returnable Deposit
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Revenue from Consignment Sales
Revenue from Franchise Fees
Revenue from Investment
Revenue from Long-Term Contracts

S

Salaries and Wages Expense
Salaries and Wages Payable
Sales Commission Expense
Sales Commissions Payable
Sales Discounts
Sales Discounts Forfeited
Sales Returns and Allowances
Sales Revenue
Sales Tax Expense
Sales Taxes Payable
Selling Expenses
Service Revenue
Shipping Expense
Supplies
Supplies Expense
SUTA Taxes Payable
Swap Contract

T

Telephone and Internet Expense
Timber
Timberland
Trademarks
Trade Names
Trading Securities
Travel Expense
Treasury Stock
Trucks

U

Unamortized Bond Issue Costs
Unearned Admissions Revenue
Unearned Advertising Revenue
Unearned Compensation
Unearned Dues Revenue
Unearned Franchise Revenue
Unearned Gift Card Revenue
Unearned Profit on Sale-Leaseback
Unearned Rent Revenue
Unearned Revenue
Unearned Revenue—Customer Advances
Unearned Sales Revenue
Unearned Service Revenue
Unearned Subscriptions Revenue
Unearned Warranty Revenue
Union Dues Payable
Unrealized Holding Gain or Loss—Equity
Unrealized Holding Gain or Loss—Income
Utilities Expenses

W

Warranty Expense
Warranty Liability
Warranty Payable
Warranty Revenue
Withholding Taxes Payable
Work-in-Process
Write-Off of Goodwill
Write-Off of Inventory

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